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XXIII

ROMANESQUE ARCHITECTURE

BY

F. EYGUN

TRANSLATED BY

Rev. B. V. MILLER

With 10 *Plates from Drawings by the Author*

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AUTHOR'S PREFACE

Of all the architectural styles that have succeeded one another in Europe, Romanesque is, undoubtedly, the most diversified. Whoever studies it in detail will meet with many surprises.

Coming into being at a time of almost incredible architectural decadence and neglect, Romanesque displays to the student the successive steps by which the perseverance of the builders opened the way from the rudest beginnings to the accomplishment of such masterpieces as Cluny, that marvellous church which, until the building of the present St. Peter's at Rome, was the biggest in the world.

The past hundred years have produced a vast number of works which make it possible for us to attain a knowledge of the varieties of Romanesque, of the differences between school and school, church and church. But our information on many points and phases is still far too fragmentary to allow a satisfactory and complete study of the whole subject. There are many good monographs and regional studies, but much of the ground is as yet unworked. It would be a good thing if ecclesiologists, following the boundaries of the old dioceses, which were often also the boundaries of the various schools, were to study in detail every existing Romanesque church, even to the humblest and least known,

wherein, maybe, the solutions of many problems may be lying undiscovered. Clear descriptions of these churches, with good photographs and plans, would be of inestimable service to the history of our monuments.

We hope that this little book will be of some help both to those who are only beginning and those who have already made some progress in their architectural studies.

Here we shall treat only of architecture, leaving aside as far as possible all mention of church decoration and furnishings, which will be studied in another volume.

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PART I

THE PREPARATION

CHAPTER I

THE ROMANESQUE REVIVAL OF THE ARTS

THE Romanesque style has its roots in architectural traditions of great antiquity. Its very name is a clear indication of its dependence upon the tradition of Rome, with which it is most closely connected. The name Romanesque or Romance is well adapted to designate both the artistic and the intellectual achievements of the tenth, eleventh, and twelfth centuries. When we consider Romanesque architecture and the Romance languages we see how their relations with Latin elements run along parallel lines. Both have the same origin, both go through similar developments under the influence of their surroundings and of exterior causes that are much alike in themselves though varying in proportionate activity. The Roman Empire as it was then understood was always taken as the model, but both speech and building were subjected to constant simplification and adaptation to fresh needs.

We may take the year 1000 as a convenient date for the birth of Romanesque architecture. This is, of course, merely approximate, for architecture, of its very nature, is the product of repeated experiments, is continually on the look-out for new methods and does not progress everywhere at the same rate.

But that the year 1000, or thereabouts, saw the end of a long period of preparation and the beginning of a new movement is attested by many witnesses, of whom the best known is the Burgundian monk, Raoul the Bald, who writes that "towards the year 1000, and during the first three years of this century there was a rebuilding of churches throughout the whole world, but especially in Italy and France, often, indeed, when they were in no need of it. There was rivalry throughout Christendom as to who should have the finest. It was as if the world were throwing off its rags and clothing itself in a garb of white churches. The faithful rebuilt, at that time, nearly all the cathedrals, as well as the shrines of the various saints and the village churches."

Similarly the Chronicle of St. Remigius of Rheims recounts that, in A.D. 1005 Abbot Airard, seeing that many of his contemporaries were rebuilding their churches, determined to rebuild his. Many charters and chronicles of the time confirm this wonderful architectural revival, which, beginning about the end of the tenth century, went on with unabated vigour during the whole of the eleventh, and, enjoying the whole-hearted co-operation of both clergy and laity, constitutes one of the greatest movements in the whole history of art.

There must have been powerful causes at work to produce such a movement. For a long time it was believed that the principal cause was the impulse of religious excitement, the reaction after the passing of the year 1000, that terrible year which, as was commonly held, was to have seen the world come to an end to the accompaniment of apocalyptic catastrophes. But it is clear that this fear of the

year 1000, even granting that it is not a mere hypothesis, did not have any great influence on the architectural revival. Many other causes were at work, as a glance at the events which heralded the eleventh century will show.

Roman building, as known to the Roman Christians in the time of Constantine and as practised in Gaul and afterwards copied by Merovingians and Carolingians, carries within itself the germ of decay. For nothing could well be less sturdy and more exposed to the ravages of fire than a basilica built in Roman fashion with its timber-work and its panelled ceilings. If we read contemporary accounts or the inventories of churches of those days, or if we look, for example, at the lists of gifts to such churches as given in the *Liber Pontificalis*, we shall realize how constant was the danger to which they were exposed. With their adornment of rich tapestries and the numbers of ever-burning lamps, a sudden draught was often enough to cause a devastating conflagration. This ever-present danger became a constant menace when hordes of untamed Germans, Normans or Magyars began to invade the land and found a savage joy in firing such well-prepared piles.

This state of things endured until wooden roofs gave place to vaults of stone, but meanwhile Roman civilization died, the administrative organization went to pieces, and the political instability and anarchy accompanying the continual readjustments of the barbarian kingdoms were but little favourable to the arts.

But still building did not altogether cease. Gregory of Tours, describing some of the churches built in his time, is loud in praise of their magni-

ficence. But his testimony and that of his contemporaries must not be taken quite literally. Such a church as St. Martin of Tours might well seem immense to them; yet, though it was the most famous place of pilgrimage in the whole of Gaul, and the religious centre of the whole country, this church measured only some 164 feet in length and 65 in width.

Similarly the marvels of the Carolingian revival were, in reality, but feeble copies of existing buildings. Yet, while the greater part of Christendom was in a state of chaos and art seemed doomed to imminent death in many places where it had kept some vigour, the work of Charlemagne, though at first sight so ephemeral, does mark a real step forward. The seventh and eighth centuries were for Byzantium a period of darkness and disorder; the advancing tide of Islamism submerged a large part of Christendom, including all the southern shores of the Mediterranean, before being checked at Poitiers, and Italy, a vigorous artistic centre, was inundated by the Lombard invasions. Gaul alone resisted and, impelled by the energy of the Pope and Charlemagne, sought to find a new way of blending the splendour of Eastern and Byzantine art with the solidity of old Rome.

Romanesque architecture was the logical outcome of the Carolingian experiments. Before, however, the goal could be reached, Europe had yet to endure the terrible years of the ninth and tenth centuries, which were, probably, the darkest part of the Middle Ages. Saracens in the south, in Italy and France, hordes of Hungarians in the south-east, Normans in all the rest of Gaul, were incessant in their attacks. Whereas the tribes of Germanic barbarians, who

had taken possession of the rich lands of the Roman world, had come as conquerors and settlers, the only object of these later invaders was pillage. Fewer in numbers, they ravaged more unmercifully, sparing nothing. There were times and places when it was impossible either to sow or reap; all security went. Never was the cruel truth of the motto *Primum vivere* more keenly felt.

In the midst of such unrest architecture, the basis and support of all the other arts, naturally decayed. No longer was there any time or opportunity for the training of architects or craftsmen; there were none left who could turn a marble column, none who understood the cutting of stone; the art of stereotomy was forgotten; there was no large-scale building and there was but little solidity in the buildings that were hurriedly run up. Ancient monuments served as quarries. They supplied the best materials, and furnished the broken columns which, placed one upon another, were used in the new churches, but feeble shadows of those which men could still remember.

It is to the later Carolingians, always ready for the affray, that we must accord the honour of having first resisted the invading raiders and then found a means of settling them in the country, thus transforming the agents of dissolution into vitalizing forces. In this way they prepared the way for peace and so for the revival of the arts. We may therefore look upon the treaty signed at St. Clair-sur-Epte in A.D. 912, which restored peace to the north, the middle, and the west of France, as of capital importance for the birth of the new architecture. The tenth century saw the end of the apparently endless process of political dissolution and the beginning of a forward movement. Decay

was arrested, a regrouping of feudal lords took place, certain powerful houses came to the front and began to create states of some importance. In these a welcome and protection were given to artists ready to attempt constructive work. Hence arose in time the various schools, reflecting the different tendencies of various districts wherein the Romanesque style was adapted to local genius and inclination.

Another active influence was the definite establishment of the Capetian dynasty. Though their empire was not of great extent, the rise to power of this young and vigorous family brought about a greatly increased political stability. Special mention must be made of Robert the Pious on account of his constant protection of the churches in his dominions. St. Germain-des-Prés is but one among many that owed their reconstruction, in great measure, to his liberality.

Finally there was the Church which, alone remaining stable amid all these revolutionary changes, had, for almost a century, been going through a period of reform and renewal. The old Benedictine spirit had received a new power of expansion from Cluny, whose moral ascendancy was immense. "In all the Middle Ages there was no greater thing than Cluny" (Mâle). And now, at the end of the tenth century, a monk of Cluny, the *scholasticus* Gerbert, had become Pope Sylvester II, while the French kings were the friends of the monks and generally ready to help them.

It was this collaboration that brought about the great Romanesque renaissance, and it was Cluny that took the decisive step, for it was due to the initiative of Cluny that at Poitiers in the year 1000 the Peace of God was proclaimed, at once the

magnificent expression of the deepest aspiration of the time and the necessary condition of fruitful labour. It is worthy of remark that whereas it was the *Pax Romana* that covered the Latin world with splendid monuments, it was left to the *Pax Dei* to rebuild their ruins.

Christendom felt herself reborn; the sense of security returned; needs innumerable made themselves felt, and first among them the need to build. And now there was no lack of time, and no necessity to rush up a church as soon as one raid was over and before the next began. But it was not enough to rebuild. In spite of the black years, or perhaps because of them, the centres of population had sometimes changed or had multiplied. In some places there was no church, in others it was too small for the growing population. New parish churches had to be built, new abbeys, new chapels. During the period of Norman raids and Saracen incursions it had often been necessary to remove the most treasured possessions of a church, the relics of the Saints, to some other place for safety's sake; new shrines, but hurriedly prepared, had thus sprung up, and now it was necessary to erect buildings worthy of the sacred and venerated remains they sheltered.

With the coming of these new times there was a call for new methods of building. Men were no longer satisfied with the churches of wood that extant documents show to have been so common. Taught by experience, they had come to realize the unsoundness of panelled ceilings; they began to construct stone vaults; they began to feel that impulse that lives in every true architect's heart, the desire to raise monuments that would last for all time.

Since the time of Viollet-le-Duc there has been a

widespread opinion that Romanesque architecture was almost exclusively monastic.

Certainly the monasteries were the only remaining repositories of culture, and it was natural, therefore, that they should be the cradles of the new architecture. Moreover, as it was a time when monasteries were rapidly growing in size and numbers, the monks had to do a great deal of building. They had to build worthy shrines for the precious relics of which they were so often the custodians, and at the same time provide accommodation for the crowds who came to venerate them. As the pilgrims were a source of income to the countries they visited, the feudal lords were generous to the monastic builders, who were also, of course, enriched by the pious alms of the pilgrims themselves. The monastic churches, therefore, were the first to be built, and, for a time, the churches built by the secular clergy were modelled upon them.

But in the abbatial workshops and building-yards were to be found others besides monks. There were many of the class known as *conversi*, whom archæologists have often mistaken for true monks, and many simple laymen. Some of these, being skilled workmen, acquired a sound traditional and practical knowledge of architecture, and going farther afield, proved their claim to be architects by creating masterpieces. We know the names not only of monks who were architects, such as Hézelon at Cluny, Guinamond of Chaise-Dieu, and John, *cementarius*, of the Trinité of Vendôme, but also of *conversi*, as those sent to Carinthia from the monastery of Villers-Bettnach, and finally of laymen, such as Isembard at Bernay, Renold at St. Savin-de-Lavedan, and many others.

There were workshops and yards maintained by bishops also, and cathedral chapters, whether monastic or secular, were equally interested in church building. It was a certain canon, John, to whom was given the task of building La Chaise-Dieu in the second half of the eleventh century.

It is true that most of the great Romanesque buildings still standing are monastic churches; but that is because the architectural style adopted by the secular clergy was more subject to the influence of fashion. The great Gothic cathedrals rise above the foundations of the Romanesque basilicas which they replaced. At Le Mans and Bayeux the Romanesque naves remain, at Strasburg the choir in the same style, the Gothic rebuilding not having been completed. The cathedral of St. Stephen at Toulouse offers a most striking example of such a mixture of styles. Some cathedrals, for example Notre-Dame at Le Puy-en-Velay, are wholly Romanesque.

Monastic influence was exerted mainly in arousing architectural activity rather than in formulating the principles of building or drawing up a code of lifeless rules. The best proof of this lies in the very diversity of Romanesque churches, and in the fact that the possibility of distinguishing monastic schools of architecture is still disputed. The schools are local rather than monastic. In Burgundy a number of Cluniac edifices form a homogeneous group, yet they differ from the churches of Cistercians, Premonstratensians or the religious of Grammont only in the less severe character of their decoration, while the Burgundian type was used by the Cistercians also elsewhere.

Such were the conditions amid which Romanesque took shape. It was founded upon Roman methods.

The problem it set out to solve had already been attacked in the East in the third and fourth centuries, while in the West the Byzantines and Carolingians had successively furnished their contribution towards its solution.

The eleventh century was the archaic period of Romanesque. In the twelfth it came to full maturity, produced its masterpieces, and achieved its many varieties of local forms or schools. Finally in trying to solve the problem of the vault, it discovered the secret of diagonal intersecting ribs. And as soon as builders realized the value of this new feature Romanesque came to an end.

In the following pages we shall study first the origin of Romanesque architecture by examining those elements that survived from earlier times and ways of building; we shall then attempt to analyse Romanesque construction by considering the plans and the different parts of buildings, and in the final chapters we shall treat of the general characters of Romanesque churches, according to their dates, their local situation and the various schools to which they belong.

CHAPTER II

LATIN BASILICAS

Civil Basilicas: Their Adaptation to Christian Worship

During the first centuries of Christianity the faithful probably met for worship in private houses belonging to members of the community, and as both the Eucharist and the *agape* were symbolical meals, they perhaps made use, for preference, of the rooms set aside for repasts. This may explain why, in Gaul, churches were sometimes built over ancient Roman villas. Meetings were also held in the catacombs, wherein chapels had been constructed for the purpose, and there were, without a doubt, some larger buildings, for we have documentary indications of their existence at the beginning of the third century; in the year 202, for example, a flood destroyed a Christian church at Edessa. We have, however, no really precise knowledge of these earliest meeting places, except that they were called *ecclesia* or *dominicum*. But when the Christian religion was officially recognized there arose the need of more spacious buildings, which during the fourth century became known as basilicas.

The usual plan of these buildings (Plate 1, fig. 1) was as follows: an oblong rectangular hall, divided

into three aisles by two rows of columns which carried a wall pierced with windows, thus giving greater height to the central than to the lateral aisles. A pointed roof covered the central aisles, the others having simple pent-house roofs. The entrance was at one end, and at the other was an apse, usually semi-circular and sometimes raised by a few steps above the floor level. Before the entrance was an *atrium*, a square court surrounded by a covered gallery, walled without and colonnaded on the inner sides. A fountain or *cantharus* adorned the centre of the atrium.

Civil Basilicas

The name basilica given to the Christian buildings shows their resemblance to the contemporary civil basilicas, which served the purposes of market, halls of justice, public meetings, or mere idling and gossip. As early as the middle of the fifteenth century the Florentine, Alberti, had suggested that the Christians must have adopted the plan of the civil basilica for their churches. His theory, though commonly accepted in France, was at the same time rejected by many on the ground that a great number of these buildings showed a very different plan. But it must be noted that the Roman basilicas were derived from two very dissimilar types. There was the Greek type, consisting of a long hall divided into three aisles, entered from one end, and covered by a single pointed roof. There was also the Eastern type, with its columns arranged concentrically; the inner circle, being higher than the outer, supported a sort of lantern, and the entrance was in one of the longer sides. An example is the hypostyle at Delos.

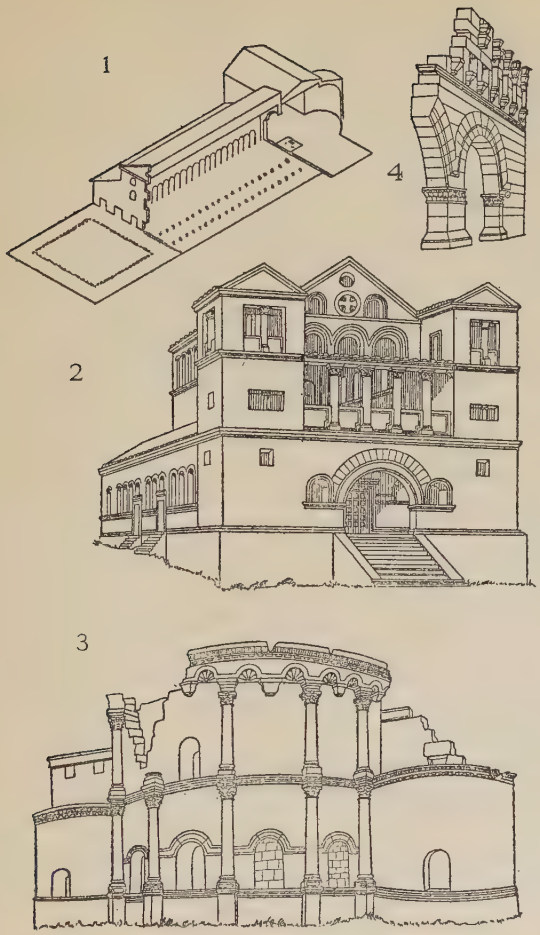
Some Roman basilicas are a compromise between these two models. The plan is of the Greek type, but the columns dividing the aisles support a wall, pierced with windows; thus the roof is divided into three separate parts. In this Roman form, as in its Greek prototype, the end opposite the entrance, which is generally preceded by a vestibule, is often terminated by an apse.

Evidently the Christians would not model their churches upon buildings exclusively devoted to the worship of pagan gods, but the Eastern type of basilica was used for so many different purposes that it had no necessary connection with any sort of worship. The basilica discovered near the Porta Maggiore (Rome) may indeed have been the meeting-place of a Pythagorician sect, but the same plan was used for a civil basilica, or for a library (now Sta Maria Antica) or for baths (e.g., Sta Maria degli Angeli). Evidently the Christians did not at once make up their minds which plan to adopt, for we meet with some examples of the Eastern plan in Syrian and African basilicas, though the Greek plan, even down to details, was the one most commonly employed; a comparison of Sant' Apollinare Nuovo (Ravenna) or Santa Maria Maggiore (Rome) with the civil basilica of Kremna reveals a striking identity of plan.

Adaptation to Christian Worship

The Christians soon began to modify this excessively simple plan. The apse became a regular feature, taking various forms, semi-circular, polygonal or trefoiled, or sometimes being flanked by side chambers, as at Deir-Seta or Tebessa. Tribunes or galleries were sometimes constructed over the side

aisles, e.g., St. Agnes without the walls (Rome), while the columns were connected one to another, either by architraves as at San Lorenzo, or oftener (and always from the seventh century) by arcading, as at St. Paul's without the walls. The finding of the Cross gave an impetus to the diffusion of the symbolical cruciform plan, which was produced by the insertion of a transept between the apse and the nave. Somewhat rare at first, this feature became common from the end of the fourth century; e.g. St. Peter's and St. Paul's at Rome, at Henchir-Ridea (Tunisia), St. Demetrius (Salonika), St. Menas. The *atrium* or vestibule, acting as a buffer against the noise and turmoil of the street, seems to have been borrowed from the Greco-Roman houses, which had from the first been used as churches. Finally a tower, or towers, were added at an early date; towers rather than belfries, for until the time of Gregory of Tours, who speaks of them as *signa*, it is not certain that bells were used; and even then they were so small that no structure of any great size was needed to house them. Be this as it may, we know that the custom of building towers to basilicas goes back to the fifth century at least, for in St. Mary Major's a mosaic dating from the pontificate of Sixtus II (432-440) shows the façade of a basilica flanked by two round towers, while two square towers adorn the façade of another basilica that is represented on the door of Sta Sabina, a work of the first half of the century. The tower was not, however, a constant feature, those, for example, of the two churches of Sant' Apollinare (Ravenna) being of somewhat later date than the churches themselves. St. Martin of Tours, built towards 470, had its tower from the first, and as



LATIN AND SYRIAN BASILICAS

1. St. Paul's outside the Walls, Rome, 4th and 5th cents. 2. Tourmanin basilica, 6th cent. Now destroyed. 3. Apse of St. Simeon Stylites at Kalaat-Seman, Syria, 5th cent. 4. Nave arcade of Qualb-Louzeh, 6th cent.

time went on this feature became more and more common.

The transept crossing also was sometimes surmounted by a bell-tower or lantern tower, as Gregory of Tours testifies.

These different parts were, of course, subject to modifications; the original plan was adapted to actual circumstances. Hence it is that we find one basilica with but a single aisle (Babouda, Syria) while another has as many as five (St. Peter's, Rome, and Bethlehem). Again, there are many with no transept, e.g. St. Mary Major's, and the atrium, though its employment was ancient and widespread (Tyre and St. Martin's, Tours [both of fourth century] Parenzo in Istria, etc.), is by no means universal. It was often omitted because it needed too much space, especially when the size of towns was limited owing to the necessity of surrounding them with fortifications.

But in place of the atrium, most churches had a vestibule or narthex (St. Petronilla at Rome and St. Simeon at Kalaat-Seman in Syria), which was probably meant originally for the accommodation of catechumens and penitents. The apse, at the other end, was reserved for the clergy, the bishop's seat being in the middle. In front of the apse, at the transept crossing if there was one, the altar stood beneath a canopy; it was generally raised upon a platform approached by steps, to make room for the *confessio*, a small underground chamber where relics were housed. Between sanctuary and nave were two ambones or pulpits. These various parts were divided off by balustrades of stone or wood, known as *cancelli*, often highly decorated.

Such was the Roman basilica which met the needs

of Western Christendom for many centuries; as late as the twelfth century such churches were being built, e.g. St. Clement at Rome. In the East the type lasted until the sixth century, the days of Justinian.

As we shall see later, the basilican plan was not the only one used at Rome and in countries subject to Roman influence. There were also churches of circular, trefoil and polygonal form, but they were not greatly favoured and, as a rule, were used for secondary purposes, as chapels and baptisteries. For long the Romanesque church was looked upon as the direct descendant of the Roman basilica. There is a great similarity between the plans of the two buildings, and we cannot fail to recognize that the Roman model exercised a dominant influence on the Romanesque plan; but there is a great difference between the architecture of the one building and that of the other. The construction of the Roman basilica was rather fragile, its walls had little thickness, its tribunes and roofs were of wood upheld by slender columns. The Romanesque church of the twelfth century is immeasurably more solid, showing an anxiety to avoid all weakness and the danger of fire; its masonry is much more solid, its walls are supported by massive buttresses to withstand the thrust of the vaults, which rest upon massive piers. Finally a wholly different kind of decoration accentuates these divergences.

CHAPTER III

EASTERN INFLUENCES

The features which make the Romanesque church so different from the Roman basilica belong to a form of art the importance of which de Vogué was the first to recognize, the art, namely, that produced the basilicas of Syria, Asia Minor, Armenia, Mesopotamia and Egypt, and had the chief part in the formation of Byzantine art.

From a very early date an intense religious life animated these countries in close proximity to the cradle of the Christian religion. Antioch, Damascus, Ephesus, Alexandria, intellectual centres made famous in the history of theology by great teachers and councils, by controversies and heresies, were also centres of artistic life. They were the home of Hellenistic art, the product of the intermingling of Grecian and Oriental traditions, and in such surroundings it was natural that Christian architecture should take a very different line from that followed in Latin lands, where the Christian basilica bears the impress of the official art of municipal monuments.

I. The Basilicas

Central Syria, Antioch and Aleppo

Though Antioch was destroyed at an early date, the surrounding country still contains ruined towns

that were abandoned at the time of the Arab and Persian invasions in the seventh century. These provide us with a number of fourth and fifth century basilicas still sufficiently well preserved to furnish material for study and comparison. They are rectangular in plan, with central nave and two side aisles, and with an apse square, circular or sometimes horseshoe in form, which is often covered by a semi-domed vault of masonry, and is flanked by two sacristies. These three compartments are sometimes laid out within the main rectangle, though the later examples form projections from it (Qualb-Louzeh). The church of St. Simeon the Stylite of Kalaat-Seman has three naves ending in three apses. The atrium is unknown. The entrance, approached by steps, is often formed by a porch which supports an open, arcaded loggia, and is flanked by two square towers (end of fifth and sixth centuries). This is one of the characteristic features of this architecture, and became the model for the Romanesque façades of the West.

This type of building, of which Tourmanin (Plate 1, fig. 2) and Qualb-Louzeh are examples, is not, however, a new thing. According to old tradition the palaces of the Sassanide kings of Persia at Firouz-Abad and at Sarvistan, south-east of Chiraz, and even the Hittite palaces of Chilani, were of this type.

Another feature of these buildings is the use of large blocks of dressed stone instead of the rubble, rag and brick used in Roman and Byzantine basilicas.

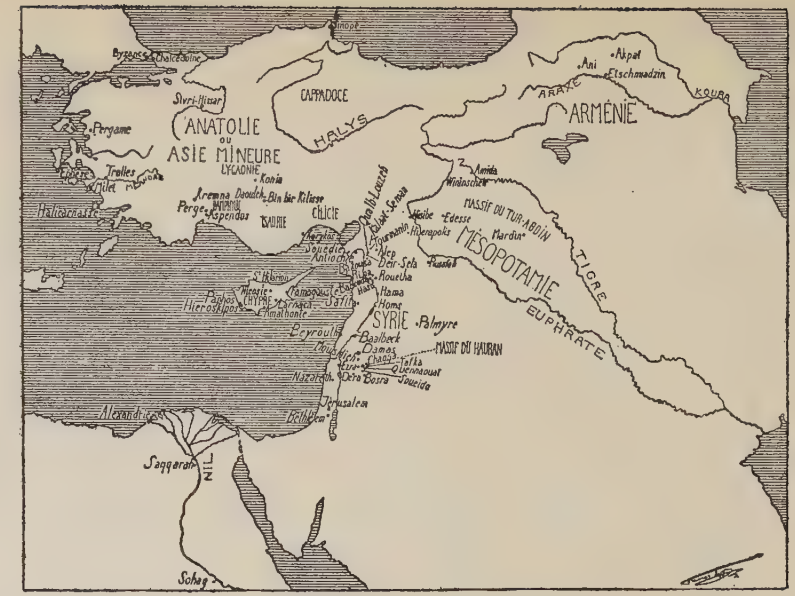
The division between nave and side aisles is occasionally effected by columns (Mchabbak, fifth century, and Baquouza), but generally by massive

piers (Plate 1, fig. 4), which can carry wider arches and thus give more space. The windows of both nave and aisles, though occasionally rectangular (Qualb-Louzeh), are generally round-headed, and the doors have a lintel, surmounted by a discharging arch, which is often of horseshoe shape, as at Hass (fourth century?), Kalaat-Seman (fifth century), Roueiha (sixth century).

The naves, sometimes of great size, were covered with timber roofs resting upon corbels or corbel shafts (Qualb-Louzeh), and upon gable walls whose arches were supported by piers (Roueiha). Exteriorly the apse was decorated with two rows of columns, one above the other, supporting a cornice, an arrangement somewhat resembling the arcading found in some Romanesque churches, especially in the south-west of France (Plate 1, fig. 3).

Hauran. In central Syria wood was abundant, but in the towns to the south of Damascus, in the district of the Djebel Hauran, sizeable timber was so scarce that the doors and even the windows were made of stone slabs (monastery of Chaqqa, Tafka, Quennaouat). Here the transverse arches carry on their outer surface stone slabs, so arranged as to look like semi-circular vaults, or low walls, allowing a flat roof to be formed of the same materials (Chaqqa). If the space is too big to be covered with slabs, a cupola is used. The churches of Quennaouat and Tafka (fourth century) were modelled upon the civil edifices of Chaqqa or the prætorium of Mousmieh, built two hundred years earlier.

Northern Mesopotamia. Here we have a group of towns lying between Amida, Mardin, Nisibe and the Tigris, together with those of the mountains of Tur-Abdin. They present for our consideration a



MAP OF WESTERN ASIA, ILLUSTRATING THE THEORY OF THE EASTERN ORIGIN OF ROMANESQUE

number of basilicas that cannot be dated with precision, but are approximately of the sixth century, and are planned upon the model of the Eastern type of civil basilica. As a rule they have but one aisle, which is relatively wider than in the Hellenistic basilica. They are interesting by reason of the system of tunnel vaults, running the length of the walls, and resting upon discharging arches. There are, however, some exceptions, St. Sergius of Rusafah (Sergiopolis), for example, being of the basilican type with timber roofing.

Egypt, the birthplace of the Arian heresy, and the principal home of early monasticism, was a country of great religious enthusiasm and of a strongly marked spirit of nationalism which could not fail to have their influence upon architecture.

Two main types of churches are found there; the first, exemplified at Saqqara, reproduces the Hellenistic basilican plan, with wooden roofing; the second, that of the churches modelled upon the "red monastery" of Sohag, comprises three aisles, a transept, and a choir of trefoil form, surmounted by a dome on squinches. These elements are not original, but rather indicate the influence of Syria and Persia, whence they are taken, upon these districts of the Mediterranean basin. It seems that Strzygowski reverses the real order of things when he maintains that these features were imported into the East by Egyptian monks, for they were already to be found there. Coptic decoration certainly had a greater influence upon Romanesque art than Egyptian architecture; but it does not form part of our present study.

Asia Minor. This region, by reason of its proximity to Greece and its easy communications

with the interior of Asia, was the natural meeting-place of Hellenic and Oriental ideas. It is very rich in ecclesiastical buildings, some of them not older than the eleventh century, but a large number dating from the fourth and fifth centuries. They are of many different types. Along the coasts of the Ægean sea from Pergamos to Miletus the Hellenistic basilica, with timbered roof and atrium, is the more common, but as we recede from Greece the influence of Syria becomes more apparent, and the more fragile methods of construction give place to buildings of fine, solid masonry. Two basilicas, those of Korykos and Sheher, exhibit an arrangement calling for special notice; the nave ends in three apses, the middle one being surrounded and buttressed by a vaulted passage, which plays a part analogous to that of the ambulatory or periapsidal aisle in Romanesque churches. The fine stone church at Perge has an atrium, as likewise the second basilica of Korykos, but generally in Isauria, Cilicia and Pamphylia, Syrian influence shows itself in the substitution of an arcaded portico as well as in the use of large-sized blocks of stone.

Going inland, we come, near Konia, to those remarkable dead towns, Bin-Bir-Kilisseh (the Thousand-and-one churches) and Daouleh. There is an astonishing variety in the fifty or so churches to be seen there. Yet, as a rule, the plan is basilican. Some have a central nave with lateral aisles and a projecting semi-circular apse. The porch is similar to that we meet with in Syria, e.g. at Kalaat-Seman, where it is flanked by two square chambers. But worthy of special notice are the basilicas with tunnel vaulting and with transverse arches resting upon piers with engaged columns, similar to those in

Syria. The openings are of horseshoe shape, indicative of Persian influence (e.g. the palace of Firouz-Abad).

Another special type is the domed church. The triple-aisled fifth-century basilica at Kodja-Kalessi (Isauria) had a single dome, on squinches, vaulting the first two bays of the nave. This dome rested upon two walls above the nave upheld by transverse arches, at such a height that side windows could be pierced in the walls above the tribunes. Here the masonry is of large cut dressed blocks, but, elsewhere, where the construction is in brick, the same method is used, though sometimes pendentives replace squinches. Later, in order to counter the thrust of the domes, they were buttressed by tunnel vaults variously arranged, and so finally was evolved the Greek cross type of church, the final logic of construction, with each arm taking an equal share in upholding the central dome.

Armenia has a place apart. Its monuments have a special character, Hellenic influence having been counterbalanced by Oriental and especially Iranian inspiration. At the time when Byzantine architecture dominated building, Armenia not only preserved her originality but also exerted an influence in Mediterranean countries as distant as Dalmatia and Italy. Recently Strzygowski has maintained that Armenia, whose buildings are of lavish construction and very imposing appearance, was the principal source of Byzantine methods. Unfortunately nothing remains of the churches erected in the fourth and fifth centuries, when the influence of Armenia upon Byzantium might have been of some importance. It appears, therefore, that the converse is true, and that Strzygowski was right in his earlier opinion

that the evidence of Byzantine influence in Armenia was "irrefutable."

Armenian architecture is based upon stone. Vaulted basilicas, some single-aisled (Ani, seventh century), some with three aisles (Aschtarak, sixth century) were numerous, but various other plans, square, trefoiled, Greek cross (Mren, seventh century), were adopted. A characteristic feature is the use of squinched domes resting sometimes on walls, sometimes on piers (Ani). Finally there are some examples of a nave vaulted with a series of domes (Thalish, seventh century).

Northern Africa. Basilicas of Hellenistic type were common in the fourth and fifth centuries. The basilican plan, carried out in large dressed blocks, is almost the only one adopted. There are sometimes as many as nine aisles (Damous-el-Karita). There are no churches planned centrally. Syrian and Egyptian influence is strong. Instead of the atrium, which is rare, we often find the Syrian porch (Morsott) flanked by towers, piers, sometimes with engaged columns (Ksar-Tala) carrying arcades and vaults, but no domes. Dar-el-Kous has groined vaulted side aisles and a half-domed apse. The curious basilica of Siaggu, which seems to show Byzantine influence, has a corridor surrounding the circular apse leading to dependent buildings. As there is no opening in the wall dividing it from the apse, it cannot be called an ambulatory, though it certainly has a resemblance to one. African churches but rarely have tribunes (Tipasa); the apse is often flanked by sacristies, thus forming a square Eastern end.

II. Churches of Non-basilican Plan

Though the basilican plan was most generally adopted and is found everywhere, its use did not exclude the employment of other forms. In some districts churches built on a circular, polygonal, cruciform or trefoil plan are numerous. In the East especially were such forms common from the fourth century to the sixth, when the elements of Byzantine architecture were being developed, and there was evidently a certain hesitation as to which type best met the needs of worship.

Round and Polygonal Churches

The Emperor Constantine built three churches on Mount Calvary, one of which, the Anastasis, or church of the Resurrection, enclosing the Holy Sepulchre, was circular. As the funeral monuments of the Romans were often of this form, we may, perhaps, find herein a sufficient explanation of the choice of such a plan. Rome still possesses two circular churches of this period, SS. Peter and Marcellinus, generally supposed to have been St. Helen's mausoleum, and St. Constantia, also built as a mortuary chapel. The latter, which is well preserved, has a domed lantern upheld by a double row of columns, and an encircling aisle. Constantine also, after having built the basilica of the Holy Apostles at Constantinople, embellished Antioch, the artistic capital of Syria, with that magnificent edifice known as the Golden Church, an octagonal building with tribunes, as in the Anastasis at Jerusalem. This Anastasis, though several times destroyed, was always rebuilt on the same circular

plan, and both by reason of its original purpose and the multitudes of pilgrims visiting it, naturally served as a model for the Christian world for centuries.

Moreover, in the East, where the dome, either upon squinches or pendentives, was looked upon as the ideal method of vaulting, this type of church was in perfect agreement with the prevalent architectural ideas. It must, therefore, have originated there, for there is nothing of the Hellenic in it. The various districts adapt it to the local methods of construction; hence in the North we have domes of rubble, in the Hauran of dressed blocks of stone, in Persia of brick. In Syria and Asia Minor this type of church is very common, with, however, a great deal of variety in carrying it out. The plan may be polygonal or round, or a polygon within a rectangle, while sometimes it is complicated by the addition of apse, portico, or atrium. It is clear, moreover, that church builders sought inspiration from existing civil or pagan buildings, such as, for example, the *Kalybeh* or small temples of the Hauran. These consist of a cubical chamber with a rubble dome. The transition from the square to the circle is effected by superimposed series of slabs striding the angles, each layer producing a polygon with twice the number of sides contained in that formed by the preceding course.

The church of St. George at Ezra (sixth century), vaulted and with an elliptical dome, illustrates this method. Here the central octagon is divided by piers from an aisle inscribed in a square, the corners of the latter being occupied by niches. The circular cathedral of Bosrah was similarly constructed, but its collapse showed that such a rudimentary way of

supporting a dome could not be used except in small buildings, such as chapels (Moudjeleia), and tombs (Roueiha).

Apparently, also, the *martyria* of Anatolia, built over martyrs' tombs and described by St. Gregory of Nyssa, were built after the fashion of sepulchral monuments. We can get an idea of them from the octagonal churches of Bin-Bir-Kilisseh with stone-built domes upon piers and encircling aisles, or from Isauria, where the same type is modified by the addition of an apse. At Dere Ashi, and elsewhere, instead of an aisle there are niches let into the walls, which are of rubble. Of a more complex plan is the church of Wiransheir in Mesopotamia, an elongated octagon with encircling aisle from which project a porch, an apse with four connecting bays, and two small side porches. This form, which was to become common, shows a tendency to combine the circular plan with the basilican so directly contrary to it.

These round churches of the East exercised a considerable influence upon the art of Byzantium, and were, possibly, the main reason for the employment of the dome in Byzantine buildings. Undoubtedly St. Vitalis at Ravenna is the finest work of its kind. In form it is an octagon. The central dome is supported by eight piers. Tribunes open into the spaces thus formed above the arcading, while below, each bay is vaulted with a semi-dome. An apse and a porch, which are not axial, complete the building. At Constantinople the two churches of St. Sergius and St. Bacchus are sixth-century examples of the same type, which, at the same time, constitute the transition to the Byzantine basilica.

But the circular and polygonal plans were em-

ployed principally for small scale churches. Since the altar was not central, and there was a relatively large part of the church from which the apse could not be seen, the building was ill fitted for the ceremonies of the liturgy. On the other hand, when baptism was ordinarily by immersion, such a plan was excellent for a baptistery. The natural place for the font was in the centre, while ministers and faithful, who would not be so numerous as at Mass, stood around. The commonest type was octagonal, the font also being often of the same form. At Rome the baptistery of St. John Lateran, of the time of Constantine, still exists. Its central part is modified by the addition of columns, suggesting an encircling aisle, which, in fact, is non-existent. The baptistery of the Orthodox at Ravenna is of the same form, though it appears to be planned as a rectangle with rounded corners, owing to the alternate sides being built as niches. Above these, however, it becomes a real octagon. Roman architecture offers an example of the same sort of thing in the Baths of Caracalla. There is a similar building at Riez (Basses-Alpes) but with an aisle. Grado offers some examples of undisguised octagons, but with apses, while at Albenga the niches, being cut in the thickness of the wall, do not affect the octagonal form.

Hexagonal baptisteries are occasionally found, as at Deir-Seta, while Nocera has a round one.

The Trefoil Plan

Some baptisteries exhibit this plan, while at Tigzirt (Algeria) there is a quatrefoil, a type of Oriental origin. The basilica built by Constantine at Bethlehem had a nave with two aisles, with narthex and

atrium, and, ending the choir, three apses. This disposition of three apses, whether prolonged by a nave or not, and accompanied by a fourth apse, to make a quatrefoil, is also found in Syria, both in civil buildings, such as the palace of Mshatta, and in religious edifices, e.g. the baptistery of St. John at Jerusalem, and the church at Bosrah (known by an inscription). At a very early date this plan is found in Egypt, e.g. the red monastery and the white monastery at Sohag, and it was either from here, or more probably from Syria, that it passed to Constantinople, where there is documentary evidence of its existence in the sixth century, and to Africa, where the best known example is the triple apsed chapel attached to the basilica of Tebessa. In Armenia and Asia Minor it did not appear until later, from the fifth century to the seventh. At Thal in the church of Our Lady is a trefoil; elsewhere, as at Artik, we meet the quatrefoil, which is found also at Zouarthnotz, near Edtshmiadsin, where it is enclosed in an exterior rotunda, after the style of San Lorenzo at Milan.

Whether the tiny mortuary chapels in the Roman catacombs, such as St. Sixtus, St. Cecilia (catacomb of St. Callistus) and St. Symphorosa, or the crypt of St. Lawrence at Grenoble, owe their trefoil plans to Eastern influence is open to question.

The Greek Cross Plan

The cruciform plan came to be preferred before all others, a natural consequence of its evident symbolism. To study the earliest examples, we must again, as in so many other cases, go back to Constantine. His church of the Holy Apostles at Constantinople was evidently of cruciform plan, but as it was replaced by Justinian in the sixth

century, we know practically nothing else about it, except what we can gather from the more or less direct copies of it that we possess, such as St. Mark's at Venice and St. Front at Périgueux (Plate IX, fig. 2). This plan was common in Asia Minor in the fourth century, as appears from the description of a cruciform *martyrium* given by St. Gregory of Nyssa. Anatolia has some examples of it of the fifth and sixth centuries in churches at Sivri-Hissar, Bin-Bir-Kilisseh, and Tomarza, where the domes are mounted on octagonal drums. In the West we can point to the tomb of Galla Placidia. In all these examples, as in many others, the cruciform planning is exterior as well as interior.

But the plan destined to find most favour at Constantinople and throughout the Eastern Empire in the sixth century, was that of the Greek cross inscribed in a rectangle. This plan, derived from the domed basilica so common in Armenia, was adopted by Justinian when he rebuilt Constantine's church of the Holy Apostles. Another example in the same city is the church Kilisseh-Djami.

It was in these districts of Asia Minor and Syria that Byzantine architecture, with the dome as its dominant feature, and its wealth of originality was born. It is worthy of note that Anthemius and Isidore, the architects of the marvellous Holy Wisdom at Constantinople, were natives of two cities of Asia Minor, Tralles and Miletus respectively. But whereas the dominating influence of Asia Minor upon Byzantine art was in the realm of architecture, it would seem that Syria played the chief part in the development of a new art of decoration.

III. The Influence of the East

It must be noted, however, that the light shed abroad by these centres of artistic life could not be confined to the East. Let us look back for a moment at what we have been studying. The East shows us a great variety of plans and methods of construction, the basilica, the round church, the polygon, the trefoil; round, horseshoe and square apses; the narthex, the porch, towers flanking the entrance; within we find great arcades with columns or piers (occasionally these occur alternately, e.g. Rusafah), and sometimes engaged columns; the side aisles sometimes have tribunes above them; here the arches are semi-circular, there pointed, elsewhere of horseshoe form; every form of roofing is met with, timber, tunnel vaults with or without transverse arches, semi-domes, half tunnel vaults, groined vaults, domes on squinches and on pendentives; to counteract the thrust of the vaults buttresses are used, and even column buttresses around the apse; in a word, all the elements that were employed five centuries later in our Romanesque churches. It might almost be said that there was an Eastern Romanesque before the Western was born, and it is tempting to connect the one with the other. But though so many similarities can hardly be wholly accidental, it is not easy to discover the connecting link.

It is easy, of course, to see how Romanesque decoration and sculpture came from the East. Ivories, manuscripts, textiles, all sorts of small objects easy to carry, were brought from the East by merchants or pilgrims, and copied by Western

artists. There is no difficulty here. But it is otherwise when we come to speak of the elements of architecture. It seems indeed that the origin of certain features of Romanesque is to be found in some Byzantine buildings, and there may easily have been other edifices that served as models. To-day it is admitted that Charlemagne's church at Aix derived its inspiration, if not directly from St. Vitalis, at least from some buildings of the same type, which have now disappeared; also that St. Front at Périgueux and St. Mark at Venice had their prototypes in the cruciform churches of the East, such as the Holy Apostles at Constantinople, as it was before Justinian's rebuilding. But a few proved facts such as these will not explain everything. How is it, for example, that the dome, so common a feature in Byzantine building, is so rare in the monuments of Romanesque architecture? Moreover, the robust dome of the twelfth century is a very different thing from the somewhat light and fragile dome of Byzantium.

The builders of Syria and Asia Minor employed both wood and local stone, the latter often worked in large slabs. Similarly the Romanesque builders, to lessen the risks of fire, made much use of the fine stone supplied by the quarries of Western lands. There is then similarity of materials and of aim. Again it is impossible to deny some connection between the churches of the Rhenish school, with their semi-circular or triple apses at either end, and their counterparts in the East. But, we must repeat, the problem does not admit of any obvious solution, and conclusive arguments are lacking.

Travellers of all sorts, of whom there was a constant stream, monks, pilgrims, crusaders, must

have seen and admired many of these splendid buildings of the East; the more highly educated among them must have tried to understand the methods of their construction, and even if they could not grasp all the details, since the interior surfaces were often covered with painting and mosaic, the main architectural lines, which are more easily remembered than the details of a piece of sculpture, must have been impressed upon their minds. Then, returning home, they would set about building churches that would recall the wonders they had seen.

To sum up, it would seem that, at first, Christian builders adopted the common plan of the Hellenistic type of basilica. The Christian emperors constructed a number of such churches in many different countries, all of which were, originally, of the same type. But as the need of an architecture adapted to the new worship began to be felt, different countries reacted to this need in accordance with their own traditions and the materials at their disposal. The initiative was taken naturally by the great centres of Hellenistic culture, and though the only buildings now existing are those of the dead cities of the interior of these countries, they are the true reflection of the buildings that once adorned such capitals of intellectual life as Byzantium, Ephesus, Antioch, Damascus and Alexandria. These districts influenced each other and the whole Mediterranean littoral. Some played more important parts than others in the formation of Byzantine art, Asia Minor and Syria for example. Armenia again, having been influenced by the matured art of Byzantium, may have repaid the debt, together with the other Eastern districts

that we have mentioned, by helping in the formation of Romanesque. But the reach of these various currents of influence cannot be determined. Any attempt at such determination would only expose one to the criticisms of the archæologist. There certainly is some connection between the Romanesque and these earlier styles of building, but the actual connecting links are not discoverable. There is very often a similarity of plan and form, but the methods of execution are generally different.

Finally, let it be noted that, by way of Spain, Arabian influence made itself felt more or less throughout France, especially along the great pilgrim routes. It is seen mainly in decorative details, such as in multifoiled doorheads and arches, and in the starred ribs that ornament the domes of the hospital of St. Blaise and the church of St. Cross at Oloron (Basses Pyrénées), and recall the vaults of the mirhabs.

CHAPTER IV

MEROVINGIAN AND CAROLINGIAN ARCHITECTURE

I. Merovingian Architecture

We have already remarked that, during the Merovingian period, building, though continuing the Latin tradition, had become profoundly decadent. As far as Gaul is concerned, we have to rely almost wholly upon contemporary writers, especially Gregory of Tours and Fortunatus, for our knowledge of the basilicas built after the barbarian invasions. There is nothing left, for example, of the church of St. Martin of Tours, built by the Bishop Perpetuus, nor of the cathedral of Clermont, built by the Bishop Namatius towards the middle of the fifth century.

Merovingian kings and prelates were great church builders, and the church, being the only big building in a Merovingian city, was constructed with all the skill of which the architect was capable, and adorned as richly as his resources allowed.

Very few of the buildings of this epoch still remain; the church of St. Peter at Vienne (Isère), often restored, but with an apse and walls of the fifth century; Notre-Dame de la Basse Œuvre at Beauvais (Plate II, fig. 1); a few baptisteries, such as Riez (Basses-Alpes), Venasque (Vaucluse), Fréjus (Var), recently restored and stripped of the plaster that hid

the masonry, St. John at Poitiers, where the lower parts are attributed by some archæologists to the fourth century, while the upper parts are generally admitted to date from the seventh; the hypogeum at Poitiers; some crypts, e.g. St. Lawrence at Grenoble, and the one at Jouarre (Seine-et-Marne) practically complete the list.

Light has been thrown upon the plan of the Merovingian basilicas by excavations at Notre-Dame at Paris, at St. Bertrand-de-Comminges, the ancient Lugdunum Convenarum (Haute-Garonne), at Néris (Allier) and Alésia (Côte d'Or). But these have done little more than confirm the already known analogy between these buildings and those of the Latin period and basilicas still existing in Italy, such as St. Agnes (built between 625 and 698) and St. George in Velabro, both at Rome. We find the same features as we have already noted and shall meet again; the basilican plan with one nave or three, polygonal or round apse, towers over the crossing (St. Martin at Tours), bell towers close to the church, the nave separated from the aisles with columns taken from older buildings, rather poor masonry with brick facings (Notre-Dame de la Basse Œuvre), wooden roofs covered with plates of copper or lead, windows either glazed or closed with pierced slabs of stone, and a decoration consisting of paintings and mosaics.

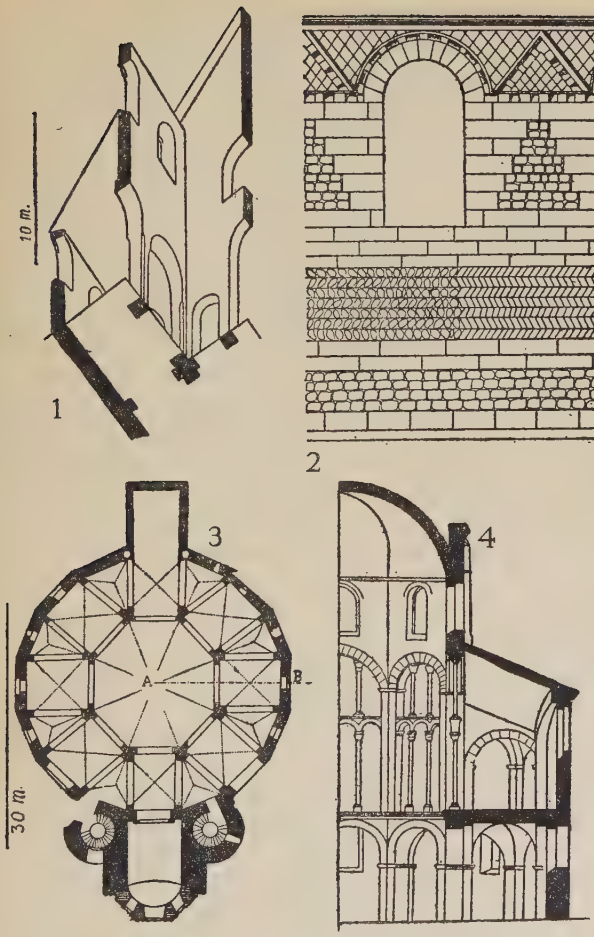
II. Carolingian Building

The Carolingian period, it must not be forgotten, prepared the way for the Romanesque revival, sought its inspiration from the Byzantines and introduced

considerable changes into the Latin basilican plan. Most of the buildings of the period have been modified at various times, and complete examples are rare.[1]

Eginhard and the Capitularies reveal Charlemagne's keen interest in the arts. His first care was to restore order. Wherever he found churches falling to decay, or perhaps seized by private individuals to serve as barns, he either had them restored, or, if they were superfluous, suppressed, and new ones built where they were needed. He charged the bishops especially to undertake the work of building, and, when necessary, he helped them with generous contributions. Eginhard, the historian, with the help of Anségise, the future abbot of Fontenelle, drew up plans and directed building operations. Remembering the existence of treatises on building, he consulted them, and rescued Vitruvius from oblivion. One of the most precious documents for the study of Carolingian architecture is the famous

[1] Here is a short list of buildings containing important remains of Carolingian work: FRANCE: Germigny-des-Prés (Loiret) first quarter of ninth century; Mettlach (between 775 and 993); Montiérender (Haute-Marne); St. Philibert-de-Grandieu; St. Martin, Angers; Cravant nave; St. Généroux (D. Sévr); Chamaliéres (P.-de-D.); St. Pierre, St. Servan; St. Pierre, Jumièges; St. Pierre, Vienne; St. Quinin, Vaison; crypts of cathedrals of Clermont, Tournus, Chartres, Auxerre and churches of St. Aignan (Orleans), Flavigny and Jouarve. GERMANY: Aix; crypts of St. Wipert and St. Gervase at Quedlimbourg; Steinbach; Seligenstadt; Heiligenberg. ITALY: at Rome, Sta Maria in Cosmedin; Sta Prassede; Sta Maria in Dominica; Sta Maria in Ara Coeli; S. Satiro at Milan (879); Alliate, church and baptistery. SPAIN: Mozarabic architecture; S. Miguel de Varanjo; Pedret, Marquet, Boada, Fonollar (Pyr.-Or.); S. Miguel de Lino; S. Cebrian de Mazote; Sta Maria d' Amer; S. Juan de Baños; S. Miguel de Escalada. ENGLAND: Saxon architecture; Bradford on Avon; Barton on Humber; St. Martin's, Canterbury; Brixworth; Earl's Barton; Repton crypt.



MEROVINGIAN AND CAROLINGIAN BUILDINGS

1. Notre-Dame de la Basse Œuvre at Beauvais. 2. Carolingian Masonry, Cravant. 3. Palatine Chapel at Aix-la-Chapelle, Plan. 4. Section.

plan of St. Gall, drawn up, doubtless in the Emperor's entourage, at the beginning of the ninth century. Probably it was never carried out, yet in its accuracy and completeness it shows better than any description the disposition of an abbey of the time, every feature and part of the building, especially of the basilica, being expressly indicated by name.

In England, Saxon architecture, differing considerably from the Carolingian, shows characteristics which, at times, make it hard to distinguish from real Romanesque.

While Carolingian basilicas were abuilding in France and Italy, a great part of Spain was building in a very different style, the Christians under Mussulman domination or influence using the so-called Mozarabic art in the buildings they erected.

It was natural that this art, drawing its inspiration from Arab sources, should present features of great interest and also that it should influence the Romanesque building that followed it. The centre whence radiated Mozarabic influence was the brilliant and populous city of Cordova. Its diffusion was effected by monks, merchants and travellers, and produced remarkable results in Leon, where many subjects of the Caliphate of Cordova had taken refuge, as well as many members of religious communities who had escaped from Mohammedan rule. It was felt as far afield as Catalonia and the Roussillon. San Miguel de Escalada at Leon, consecrated in 913, is one of the curious buildings erected in this style by monks who had come from Cordova. Its plan is one of three aisles ending in three horseshoe apses, vaulted with four-sided cupolas, the whole enclosed within a rectangular

solid mass of masonry. The supporting arches are of horseshoe shape, but the windows in nave and apse are round-headed. The whole is roofed with timber, and a portico runs along one side.

The arrangement of Santa Maria de Bamba is somewhat different; here the eastern end, which is divided into three communicating compartments, is rectangular; so also are the piers separating nave from aisles, but the arches throughout are of horseshoe form. The same type of church, with very similar arrangement, is found at Pedret and Marquet (Catalonia) and at Mazota, while a simpler form of the same plan has resulted in the small churches to be found at Morasa, Boada (Catalonia) and Fonollar (Pyr.-Or.), where the only relief to the monotony of the single-vaulted nave is provided by heavy transverse horseshoe arches, which are supported on piers projecting from the walls.

Basilicas

Masonry. This is but mediocre. As a rule a small-sized block is used, more or less regularly cut, sometimes square but more often elongated, laid in very thick mortar. Often different sorts of masonry are found in the same wall. At Cravant (Plate III, fig. 2) there is an alternation of small and medium courses, while the upper part of the building is ornamented with *opus reticulatum.* At St. Généroux and at Savennières (Maine-et-Loire), the façade of the latter being possibly Merovingian work, the same variety is found, with the addition of some herring-bone masonry. Brick string courses,

always to be found in Roman and Merovingian walls built of small-sized blocks, are rarely met with in Carolingian building, being replaced by string courses of blocks of a somewhat greater size.

Plan. The basilican plan is the most usual, though in small buildings such as the chapel at Cividale (tenth century) only a single nave is employed. But though the plan is sometimes the same as that of the Latin and Merovingian basilica (Parenzo, Istria, ninth century), certain modifications, which later were to be adopted by the Romanesque builders, are often introduced. The choir, for example, is lengthened by bays inserted between the apse and the main part of the building. An excellent example of this arrangement is shown on the plan of St. Gall, where these extra bays are called *Chorus Psallentium.* The semi-circular central apse is often flanked by two smaller apses terminating the aisles, as at Santa-Maria-in-Dominica (Rome). At Santa Maria in Cosmedin the three apses are enclosed within the straight wall of the square east end.

A feature clearly marked on the plan of St. Gall, which we shall meet with again in the valley of the Rhine in Romanesque times, is the presence of two apses facing one another, at the east and west ends. This peculiarity must have been common in the Carolingian period and before it. It is found in the ancient church of Aleth (St. Servan) of the tenth century, and from the description given by Gregory of Tours, the cathedral of Clermont, built by Bishop Namatius in the fifth century, would seem to have been of the same type. It was the same at Fulda in the beginning of the ninth century, and we shall meet with the same plan, preserved by a sort of

crystallization, as late as the twelfth century, at Maria-Laach and Speyer. Possibly it is a reminiscence of the civil basilicas of Rome.

Among the more important innovations is the ambulatory, the first example appearing in the crypt of the cathedral of Clermont-Ferrand, consecrated in 946. It is also found at St. Aignan (Orleans), while excavations at St. Martin of Tours show that it was a feature of the choir built there in the early years of the same century. At Clermont four and at Tours five minor apses were built out from the ambulatory.

The crypt of St. Aignan at Orleans, dating from the middle of the tenth century, has a narrow passage around the choir with four square radiating chapels; a similar arrangement exists at Tournus. The ambulatories of the cathedral at Ivrea (Italy) and of the church of La Courture at Le Mans probably date from the end of the tenth century.

The transept was an exceptional feature in Latin basilicas; in Carolingian building its use became more frequent, and before long it was regarded as almost indispensable. In many cases the plan shows two transepts. From two existing manuscripts we can see the disposition of the two ninth century churches of St. Riquier (Somme) and Cologne. Two transepts are clearly visible, one near the entrance, the other just before the choir. Here again the conservatism of the valley of the Rhine is apparent, for this arrangement, to us so peculiar, was adopted by the Romanesque builders of that district, and reappears, for example, at Speyer.

Elevation. In a general way the Carolingian basilica resembles the Roman. Lofty arcades divide nave from aisles, and above the latter there are

sometimes tribunes, as appears from their remains still to be seen at St. Pierre in Jumièges. Tower and lantern rise above the crossing; a semi-dome, adorned with mosaic, often covers the apse, while the main building is roofed with timber.

But there is one striking difference. Roman ruins provided a very rich storehouse of ready-made columns. But the supply was exhausted at last. If precious marbles were now wanted they had to be brought from afar, and in any case the art of turning and polishing them was lost. So the column as a support for the arches is now replaced by the pier, which is often square, as at Germigny-des-Prés, and sometimes oblong, as at St. Pierre de Vienne. In these two cases the piers are of blocks of great size accurately cut, but sometimes stone alternates with courses of brick, as at St. Philibert at Grandlieu, where the enormous piers are out of all proportion to the size of the church, and towards the base are thickened still further by a sort of sloping buttress. In some instances, as at Germigny-des-Prés, the piers have both capitals and rectangular bases; in others, as at Vienne, they have neither. The piers in the crypt of St. Aignan at Orleans have chamfered edges.

The methods of construction, however various they may appear, are in reality the same for piers as for walls. At Seligenstadt, in the valley of the Main, are some built of long small blocks of stone such as are found so commonly in walls.

In crypts the column is generally preferred to the pier, and as a rule the capital is a degraded form of the Corinthian type. Some are ornamented with sculptured heads and animals. At Vicence, the desecrated church of SS. Felix and Fortunatus,

dating from 985, offers an example of the employment of piers and columns alternately.

The arches are constructed of narrow voussoirs, often mingled with bricks (St. Martin, Angers), the upper surface being occasionally enriched with ornamental masonry, as the doors of Cravant. Doors and windows are often quite plain. At Cravant and St. Généroux the soffits of the windows are decorated with a continuous billet ornament which, between each pair, forms a straight-sided arch. In buildings that might be used as places of defence the windows are small; elsewhere they are of normal size. Finally, the commonest sort of decoration on the jambs of doorways and on the slabs of marble forming the chancel screen is some form of interlacing ornament (Cravant, and San Clemente, Rome).

Vaults. There is documentary evidence that some Carolingian churches were vaulted. In the case of buildings of the radiating type there is no room for doubt; two well-known examples are the palatine chapel at Aix and Germigny-des-Prés. In these two churches we find the dome, the semi-dome, the tunnel vault, the half-tunnel and the groined vault. Nearly all crypts, Jouarre for instance, have groined vaults. But in all these cases only very narrow spaces had to be dealt with. Churches with vaulted naves seem to have been very rare, though an attempt was made at Rheims, where the first bays of the cathedral were vaulted. In Catalonia, however, vaulted churches were commoner, Santa Maria d'Amer (A.D. 945) being an example, as well as several Mozarabic churches. Elsewhere, with but few exceptions, only small spaces were vaulted, such as narrow bays, side-aisles and apses.

Bell towers. These, whether round or square, generally stood apart from the main building, or were joined to it by a small passage or gallery, such as the plan of St. Gall shows for the two round towers flanking the apse. At St. Riquier and Cologne, in addition to the lantern above the crossing, other towers are built in the angles formed by the choir and the transept.

Variously Planned Churches

The Carolingian period, therefore, saw many imitations of the Latin basilicas, but there were also many other churches built in a very different style, which attest the strength of Byzantine influences.

When Charlemagne, some years before becoming emperor, decided to raise a palatine chapel that should be worthy of him and his ambitions, his architect, Eudes of Metz, drew his inspiration from models still existing in Northern Italy, Ravenna and the East. He planned a radiating building in two stories, thus allowing the sovereign and his court to look down upon the crowd of subjects and servants. The central octagon is formed by eight piers, and the external wall of the ambulatory gives a sixteen-sided polygon (Plate III, figs. 3 and 4). This encircling aisle is divided into bays which are alternately rectangular and triangular, with groined vaults carrying the tribunes above. These are covered with half-tunnel vaults of rubble which buttress the dome surmounting the central octagon. Windows within which are set two ranges of columns, one above the other, open from the octagon into the tribunes. A rather shallow, square-headed choir

projects from the east, corresponding with a western narthex that formerly carried a tower. Access to the upper story is by two stairways placed in the angles of narthex and main external wall. The vaults are of rubble. The whole building, with the excellent masonry of walls and piers, its decoration, mostly in mosaic, its marble columns with their capitals, is admirable, and the admiration it excited among contemporaries is attested both by written accounts of it and by the many buildings erected in feeble imitation.

The church of Germigny-des-Prés, in the Loiret, though much restored, dates from the first quarter of the ninth century. In its original form, the plan was a square, with four small horseshoe apses projecting from the four sides. In the centre, four piers connected by arches support a tower, crowned with a dome on squinches. Above the entrances to the apses, other arches springing from wall piers support semi-circular vaults. The east chapel forms the choir. At Milan the church of St. Satirus, the exterior of which was modified by Bramante to give it a circular form, was built upon a similar plan, which is modelled upon that of certain Eastern churches, for example Etchmiadsin.

To conclude, Carolingian building provided some important new features afterwards adopted by Romanesque: the lengthened choir, the ambulatory with its radiating chapels, the alternation of supporting piers and columns, and, possibly, some new varieties of vaults.

PART II

THE ELEMENTS OF ROMANESQUE ARCHITECTURE

CHAPTER I

MASONRY

The Romans used many sorts of masonry, but they may be divided into two, all others being simply varieties of these, namely, concrete and straight-jointed masonry. In the former, stones and cement are mixed together to form a solid mass, which, when hard, produces a sort of conglomerate monolith, something after the fashion of our masses of concrete. In the latter process great blocks of cut stone are laid in regular courses without cement, and held in place by their own weight.

But these methods were more or less modified according to the resources available in different countries. Brick was sometimes used instead of stone, and we often find a mass of concrete set between two thicknesses of worked stone or of brick. The irregularities of the masonry were balanced by courses of brick and hidden by being covered with plaster or thin slabs of marble, unless the exterior blocks, whether large or small, were so carefully cut as to render this unnecessary. The final rough-casting was done after the wall was built. Roman building then spells rigidity with an artificial concealment of its natural defects.

Romanesque mason's work, on the contrary, like

all eleventh and twelfth century building, is essentially sincere, its objects being flexibility and economy in materials, working and transportation. It is by way of exception and because they were surrounded on all sides by the traditions of Rome, that the Romanesque builders of Italy had recourse to a veneer of marble, such as we see in the domes of Siena and Florence.

In place of the Roman concrete work, which was too costly in materials and workmanship, we find a thick wall built of two facings of rubble of medium size, cut more or less regularly in the building-yards after leaving the quarry, and bedded in mortar which compensates for their irregularities. The blocks are laid along the grain, and their joints alternate from course to course. The space between the two faces is filled with a mixture of stones and mortar. Here and there bonding stones or through-stones are used, these being stones used in one of the faces which project beyond its inner surface into the rubble core, or even pass right through from face to face, like a beam, giving strength to and stiffening the wall. For the sake of economy of material and because the accurate dressing of stone had fallen into oblivion, the blocks vary in size from course to course and often from block to block; the use of large sized blocks is rare, for the cost of bringing them from a distance was too high.

But this method of building, which became general in the twelfth century, was the result of two centuries and more of experiments. The masonry of Merovingian and Carolingian buildings is usually very rude. The stones are small and shapeless, with bonding and string-courses of bricks. We read, indeed, of buildings constructed "quadris

lapidibus," but they must have been exceptional, and in all probability the materials were taken from older Roman monuments. The curious church of Savennières (Maine-et-Loire) is an example of this use of uncut blocks, set in the thickest of mortar, and adorned with several courses of herring-bone work. At St. Généroux (Deux-Sèvres) the decoration is provided by a mixture of medium sized masonry, reticulated work and herring-bone.

At first the Romanesque masons were ready to employ all sorts of methods, but their first care being to use local materials, which might be granite in one place, limestone in another, or sandstone elsewhere, their material varies with the locality. So, for example, while we find the use of small and regular blocks, unrelieved by brick courses, more or less general in the eleventh century, especially along the banks of the Loire, it is hardly met with at all in the district around Soissons, where there is an abundance of good and easily worked ashlar.

Herring-bone work, also, is common, especially in Normandy and the neighbourhood of Beauvais. Often again the search for decorative effect produces more complicated arrangements of materials; in the tenth century church of Ronceray d'Angers a sort of wire-netting effect is produced by the use of blocks cut hexagonally. In the twelfth century this kind of mosaic work in stone became quite common in the West, being found at Notre-Dame at Poitiers, St. Jouin-de-Marnes (Deux-Sèvres), Villesalem (Vienne), Rioux, Rètaux (Charente-Inf.). The stones are cut into circles, lozenges, chevrons, polygons, fans and many variations of these figures. Elsewhere, and especially in Lombardy, Provence and Auvergne, stones of different colours are used in the production

of many designs, such as stars, ribbons or chequer-work; examples may be seen at Digne (Basses-Alpes), Embrun (Hautes-Alpes), San Michele (Lucca), San Giovanni (Pistoia), Chauriat, Clermont-Ferrand, Issore (Puy-de-Dôme) and even at Vézelay in Burgundy and St. Martin d'Ainay at Lyons.

A process common in the eleventh century, and sometimes found in the twelfth, is to set small and irregular stones in a compact mass of mortar, so that only very little of the stone can be seen; e.g. La Trinité at Vendôme.

Medium-sized masonry is also common in the eleventh century, and not infrequently small fragments of tiles and stones are inserted to correct inequalities in the sizes of different blocks. The use of large blocks is rare, and when found they are often but clumsily worked. A common practice, continued occasionally in the twelfth century, is to form a projecting convex or bevelled joint in the customary thick bed of mortar. Throughout the Romanesque period brick is used where stone is lacking, as around Toulouse in the south of France and in parts of the north. Otherwise it is only employed for string courses, as in the towers of Ste Foy at Conques (Aveyron).

The builders of Provence, with many fine Roman monuments before their eyes, often used large blocks with fine joints.

The masons shaped their blocks of stone with mallet and chisel or with a small pick, and the working marks remain; sometimes straight up and down, sometimes criss-crossed (Notre-Dame at Clermont-Ferrand); or again, arranged in fern-leaf pattern, they are used with a decorative effect. Finally mention may be made of the masons' marks, which,

appearing first in the eleventh century, are found more frequently in the twelfth and become common in Gothic building. They are of all kinds: letters, hearts, five-pointed stars, hexagrams, etc.; they serve probably as the stone-cutter's signature to show how much work he had to be paid for, or possibly as a help to the builder in his work.

The Romanesque masons, therefore, made rapid progress in the forgotten art of stone-dressing. But to produce examples of stone mosaic work is by no means enough. They had to learn how to cut the voussoirs of an arch, whether of simple form or whether built into a rounded surface such as a tower, and to work the stones for various kinds of vaults, where the voussoirs are sometimes of a complicated form. It needed a long apprenticeship before they were able to build such remarkable monuments as the three-lobed chapel of St. Cross at Mont-majour (B.-du-R.), and the well-known "cork-screw" of St. Gilles (Gard) which dates from 1160 and is the last word in stone-dressing. In studying the profiles of bases and capitals we shall see how gradually the masons found their way along the road to the complete rediscovery of an art that had been lost for centuries. They had to learn first of all how to build an arch. Once this was mastered the art of vaulting was within their reach.

CHAPTER II

THE BASILICAN PLAN

Though the Romanesque builders adopted many different plans, most of these are derivations from a more or less developed basilican plan. Common features are the extension of the choir, both in length and width; the addition of radiating chapels to which an ambulatory gives access; the transept, which has become almost indispensable and is occasionally doubled; and, especially in monastic churches, transeptal chapels, necessitated by the large number of priests. In most districts crypts are customary, as well as porches and bell-towers in various positions.

We shall have to consider the plan as a whole, then its various parts, for each has its own special features. Choirs of different types, for example, may be found in conjunction with a single type of nave, and the same plan may be completed by, or may lack, various accessory parts. We shall, then, have to see how these different parts are combined into a whole.

I. Drawing the Plan

Orientation

Romanesque churches are orientated. While this practice was followed by some of the Latin architects, it was sometimes viewed with disfavour and

even regarded as superstitious. It gained ground, however, and under the Merovingians and Carolingians, became the general rule.

In an orientated church the apse is towards the east, and, by a useful convention, we speak of that end as the east and the opposite end as the west end, even when orientation is defective. Sometimes, as the result of alterations, the original orientation of a church is changed. For example, the church of La Baume de Transit (Drôme) was built in the twelfth century on a quatrefoil plan; in the following century the northern apse was replaced by a nave, so that the axis of the church now lies north and south. The lie of the land is likewise a disturbing influence, as is most clearly seen in those churches cut out of the living rock, such as St. Emilion (Gironde).

Deviation of the axis

Few of the greater churches were built all of a piece. Generally the choir was built first, and the rest followed as the necessary funds were collected. The original plan was not always carried out as first drawn up, the architect being at liberty to keep pace with new methods and to follow changing tastes; hence the varying shapes of moldings, bases and voussoirs allow us to follow the course taken by the building operations and approximately to date the different parts. In order that the services might be carried on uninterruptedly, the older necessary parts were preserved while the work went on. For example, if it were decided to rebuild a church, the nave would be walled off while the choir was demolished and the new one built; when this was finished, it was consecrated and used for worship

while the old nave was in its turn destroyed and rebuilt. This method of piecemeal construction is often a sufficient explanation of the fact that the axis of a church sometimes deviates from a straight line. The temporary walls erected cut the lines to be traced and make it only too easy to make mistakes in the alignment.

Other reasons, however, also led to such axial deviations, especially the lie of the land; it is clear, for example, that the many axial deviations in the church of Notre-Dame de Montmorillon (Vienne) are due to its situation at the edge of a rocky cliff. Elsewhere, again, the building of a church suffered from the results of already existing circumstances. Towns in the eleventh and twelfth centuries were narrow and crowded labyrinths wherein it was not always easy to find the space for a new church, and the builders had to reckon either with existing buildings that might prove serious obstacles, or with the problem of not interfering with traffic circulation. There are churches, e.g. Preuilly (Indre-et-Loire), with successive deviations of the axis in opposite directions; others show a decided deviation towards the north, as St. Pierre at Maillé (Vienne), while in others again it is towards the south, as at Le Dorat (Haute-Vienne).

It is, therefore, useless to appeal to symbolism as an explanation of the axial deviation sometimes to be seen. Some have thought that it symbolized Christ bowing His head upon the Cross, but the very fact that such an irregularity is sometimes found in churches with no transepts is enough to prove the assertion false.

The medieval builders were more careless of symmetry than we are to-day; to study the plan of

a Romanesque church is to see how little account they took of accuracy in measurements. And it is this lack of precision, allied, as it was, with a sure and wide grasp of the principles of building and canons of art, that relieves the Romanesque of monotony and hardness and gives to it the qualities of vigour and picturesqueness that are such striking features of the churches of the time.

II. The Various Parts of the Plan

Choir

Some churches had a square east end, which, of course, was easy to construct. A very large number of small French churches were built in this way—e.g. Ménévillen (Oise), Rivière (Indre-et-Loire)—but none of them can be compared in size with the English church of Romsey, or the German cathedral of Worms or Trier. At a later period the Cistercians, moved by their love of simplicity of line, developed this type of east end in churches of great size, such as Fontenay (Côte-d'Or) and, abroad, Fountains in Yorkshire and Alvastra in Sweden.

The Latin basilica had, as a rule, a semi-circular or polygonal apse, a feature to be found at Stes-Maries-de-la-Mer (B.-du-R.), at Obazine (Corrèze) and in a host of other churches. Sometimes the apse is polygonal without and semi-circular within, as at Maguelonne (Hérault). The single apse, however, was often found to be insufficient, and additional minor apses were built out from the choir, e.g. Solignac. These are, as a rule, semi-circular and covered with a semi-dome; sometimes they are little more than niches, and occasionally they are square, as at Tournus (Saône-et-Loire), Nesle (Seine-

et-Oise); at Avranches (Manche) and in a few other places they are alternately round and square. Sometimes, in order to simplify the problem of roofing, these minor apses are externally built up so as to be invisible from without and make the whole apse appear round or polygonal; e.g. Thérouanne (Pas-de-Calais) and Roffiac (Cantal).

Again, the space between two radiating chapels may be occupied by a sacristy; e.g. Aigues-Vives (Loir-et-Cher). The more usual number of these minor apses is three or five, but there is no fixed rule. Preuilly has but one, St. Léonard (Haute-Vienne) has seven, while at St. Sernin at Toulouse the number rises to nine. In Auvergne four are so often met with as to have been claimed as a mark of the Auvergnat school; but it is by no means universal. If Orcival (P.-de-D.) has four, St. Nectaire, not far away, has only three.

When the number of radiating chapels is odd, the central one (the apsidal chapel) is often wider and longer than the others. As a rule it is dedicated to the Blessed Virgin. It is exceptional for it to be other than semi-circular in plan. At St.-Martin-des-Champs (Paris) the plan is trefoiled, a similar plan being found also in some Scandinavian round churches, e.g. Nylarsker in the island of Bornholm, Denmark.

As a rule an ambulatory gives entrance to the radiating chapels and divides them from the choir. This periapsidal aisle (which is occasionally found even where there are no radiating chapels, as at St. Saturnin [P.-de-D.] and in St. Edward's chapel in the Tower of London) serves a most useful purpose, giving free passage from one side of the church to the other without crossing the choir. In

the Middle Ages, which saw a great development in the cultus of the Saints, this was most important, since their relics were generally enshrined in one of the chapels behind the choir, and it was necessary for crowds of pilgrims to be able to visit them without confusion and disorder. It is not unusual for the floor of the choir to be raised a little above that of the ambulatory.

The periapsidal aisle is not a wholly novel feature, for we have already met it at Siaggu, but in Romanesque buildings it is always divided from the choir by columns (which are sometimes monoliths) allowing an almost uninterrupted view of the altar.[1]

The tenth-century basilican cathedral of Clermont-Ferrand provides us with the earliest example of the ambulatory with radiating chapels. The idea was soon adopted in many important churches, especially such as were well-known places of pilgrimage. We do not meet with it, however, in the schools of Provence and the Rhineland, where, as a rule, the choir is differently arranged.

Again, in those churches where the minor apses flank the principal apse, instead of radiating from it, the ambulatory is, naturally, non-existent. Two parallel apses terminating a single nave, as at Montbolo and Espira-de-l'Agly (Pyr.-Or.) are rare, but it is quite common to find three apses at the east end, the central one being, as a rule, larger than the others, which, nearly always, correspond to side aisles, as at Bazarnes (Yonne), or to the transept arms, as at St. Lazare (Autun) and St. Genon (Indre). Another but a rare arrangement is to

[1] At St. Gotthard, Hildesheim; La Canourgue (Lozère) and Acerenza (Italy) a wall takes the place of the columns; this is exceptional.

enclose both central and flanking apses within a massive pentagon; e.g. St. Quinin at Vaison (Vaucluse) and St. Flavian at Montefiascone (Italy). Occasionally, and particularly in Normandy and Corsica, in churches built on the so-called Benedictine plan, the flanking apses are replaced by square chapels; e.g. Cérisy-la-Forêt (Manche). Chateaumeillant (Cher) shows the central apse flanked by several minor apses on a diminishing scale, extending to the transepts.

Finally, in the Rhineland, but hardly anywhere else, we sometimes see two apses facing each other, at the east and the west ends of the church.

The Transept

Churches of any size or importance without a transept are not common. But even when there is no transept, as at Notre-Dame-la-Grande at Poitiers, there is nearly always a distinction made between nave and choir, either by raising the latter (St. Gabriel [B.-du-R.]) or by building an intermediate bay distinct from those of the nave.

Although the transept does not always project beyond the main walls of the building, it is generally planned so as to form a real cross, with two small apses built out from the arms parallel to the choir. Sometimes the arms are considerably elongated, with several bays and many chapels, a common feature of Cistercian churches, e.g. Obazine. In pilgrimage churches (St. Sernin, Toulouse) the transepts have their own side-aisles, and sometimes, as at Cluny, there are two transepts, a feature also of Rhineland churches, as that of the Holy Apostles at Cologne. In this latter church the arms of the transept are semi-circular, forming with the apse a

sort of trefoiled cross, an arrangement common in the Rhineland, even with a single transept, as in St. Mary's at Cologne, and occasionally found elsewhere, e.g. at Marignac (Charente-Inf.) and St. Maurice-en-Gençay (Vienne).

Nave and Porch

As with the Roman basilica, so with the Romanesque, the nave may have or may lack side aisles. Churches without side aisles are very numerous, especially south of the Loire, including not only many small buildings but also some of the great domed churches, such as Angoulême cathedral, and others in Languedoc and Provence.

It is rare to find a church with but one aisle divided from the nave by a row of columns (Taxo d'Amont [Pyr.-Or.]), but those with two are numerous, especially in the north and in Lombardy, where the use of timber roofs relieved the builders from all difficulty in the matter of vaults. In Burgundy, Auvergne and Poitou, vaulted churches with two side aisles are numerous, while occasionally some of the largest have four, e.g. Cluny, and St. Sernin, Toulouse. The division between nave and aisles is effected by piers, by columns (St. Martin-d'Ainay at Lyons), or by both, used alternately, a common practice in Normandy, Lombardy, and the Rhineland.

The door of the church is often preceded by a narthex or a porch. The narthex is sometimes of considerable size, with several bays and its own side aisles (Tournus), whereas in another case it may be formed by a single bay within the church itself (Notre-Dame-du-Port). The porch is occasionally extended into a portico running along the front

and sides of the building, as at Sant Esteban at Segovia.

Towers and Belfries

The plan of the church is usually completed by belfry or other towers, though when these rise from the gable or body of the church, or crown the transept crossing, they are not indicated upon the plan except by the greater thickness of the supporting piers. Towers are generally square or circular, occasionally oblong in plan. They occupy the most diverse situations. In the Roman basilica two towers, as we have seen, sometimes flanked the entrance; the Byzantine builders placed their towers more or less anywhere, sometimes altogether apart from the main building. This latter peculiarity is met with elsewhere in later times (as in the plan of St. Gall) and especially in Italy, witness St. Zeno at Verona and the famous leaning tower of Pisa, but in other countries it is of rare occurrence and then is often due to peculiarities of the site. The general rule was for the towers to be attached to the church. If there is but one tower it stands, as a rule, in projection from the north-west or south-west angle; if two, they flank the entrance and sometimes form part of it, without any forward projection (La Trinité, Caen). In the schools of Lombardy and the Rhineland towers are sometimes placed in the angles formed by the transept and the choir, e.g. Sant Abbondio (Como), Worms cathedral (Plate x) and Morienval (Oise).

Belfries or towers, again, are often placed along the north or south walls (Cunault, Maine-et-Loire), and sometimes a church may have several; at Morienval there are three, at Maria-Laach six,

while Cluny had seven, of which, however, two were not built until about 1220.

Crypts

As the Roman basilica had its *confessio*, so the Romanesque church had its crypt, to which access was given by flights of steps opening, very often, into the transept arms (Notre-Dame-du-Port, Clermont), though in many churches the original entrance has been changed.

Like the apsidal chapels, the crypt also was the depository of precious relics whither pilgrims came to venerate them; it also served as a chapel and often had several altars. As a rule the crypt was formed by a deep excavation beneath the choir, though, sometimes when the choir itself was raised to a considerable height, or the church was built upon a slope, the crypt is above ground and, in the latter case, is utilized to simplify the problem of levelling the site (Notre-Dame de Montmorillon [Vienne] and St.-Martin-du-Canigou [Pyr.-Or.]). The plan of the crypt reproduces that of the choir beneath which it lies, " so invariable a rule," says de Lasteyrie, " that whenever there is disagreement between the plan of the crypt and that of the choir above it, as at Montmajour, we must always look for the reason in a subsequent rebuilding of the latter." So beneath a round church, such as St. Benignus at Dijon, we find a circular crypt.

The crypt, however, is not a universal feature of the Romanesque church. Some are very simple, just an underground chamber without differentiation or division, as at Rougnac (Charente). Others are most complicated. At le Ronceray d'Angers two rows of columns divide the crypt into three naves

which have groined vaults and end in a semi-circular wall. Two small apsidal chapels correspond to the transept arms of the church above. At Auxerre the crypt of the cathedral has an ambulatory, from which opens a small apse, surrounding the three naves; a somewhat similar arrangement exists at Winchester, where, however, the main part has but two naves and the greater size of the apse has made it necessary to introduce a line of columns down the middle. Radiating chapels opening from the ambulatory are often met with, as at Faye-la-Vineuse (Indre-et-Loire).

Though the crypt sometimes, overstepping the limits of the choir, extends beneath the transept, as at Speyer and St. Zeno (Verona), it is rare for it to extend beneath the nave (e.g. St.-Gilles [Gard]), or the side aisles, as it does at Chartres, while to find one reaching even to the porch, as at St. James at Compostella, is quite exceptional. Some local peculiarities may be noted. In the Rhineland, for example, some of the double apsed churches have two crypts, one under each apse, or a single crypt with an apse at each end (Le Bourget, Savoy). Many of these Rhineland crypts have a central row of columns dividing them into two naves, as at St. Bartholomew (Altenburg). St.-Martin-du-Canigou has a crypt running the whole length of the church, which is exceptional and, in this case, is owing to constructional reasons. Again, the exceptional size of Canterbury cathedral crypt is the result of two or three having been opened out to form one.

The crypt, by reason of its position, had to be vaulted. The groined vault, with or without transverse arches, is almost the only kind used. At

St.-Martin-du-Canigou the tunnel vault, with transverse arches, is employed for nave and aisles; so also at Morthemer (Vienne), while at Le Dorat the ambulatory is vaulted in this way. These vaults are supported, as a rule, by massive piers, square (St. Gilles) or round (St. Denis), but more slender ones are sometimes used. Engaged columns are often employed to take the transverse arches (Nevers cathedral). Columns, in place of piers, are sometimes employed; at St.-Pierre-des-Essarts (Vendée) they support the vaults, at Mt.-St.-Michel in the crypt de l'Aquilon they carry the transverse arches. In some cases, as at Le Dorat, the ambulatory is divided from the main part of the crypt by a pierced wall instead of piers.

These underground chapels, naturally dark and often blackened by the many candles always burning before the relics of the Saints, as at St. Zeno at Verona, Ste. Radegonde at Poitiers, and Notre-Dame-du-Port at Clermont, form one of the most charming features of Romanesque. The coming of Gothic meant the loss of that delightful play of light and shadow produced by the narrow openings and the many closely set columns. The employment of ribbed vaults which, as early as the twelfth century, produced such a marvel of elegance as the crypt of Hagetmau (Landes) would, doubtless, have meant the introduction of new types of crypt had not the cultus of relics entered on a new phase. About this time it became customary to place the bodies of the Saints in shrines raised behind the altar, and consequently the necessity for crypts passed away. The crypt at Bourges was constructed in the thirteenth century, that of St. Eulalia at Barcelona in 1329, that of Triel (Seine-et-Oise) in the sixteenth

century, but these are exceptions to the general rule. As late as the seventeenth century the Benedictines of St.-Maixent (Deux-Sèvres) reconstructed their crypt to house the relics of St. Léger.

Rock or Cave Churches

These, of which there are some belonging to the Romanesque period, must not be confused with crypts which, both as to their purpose and their architectural principles, are closely linked with the churches beneath which they are constructed.

Underground sanctuaries and grottoes have existed in all ages, and during Christian times they have been of many kinds, e.g., the chapels of the Catacombs, hermits' cells, miraculous grottoes. Among others we may mention the Holy Sepulchre at Jerusalem, the cave church on Monte Gargano where St. Michael appeared, the chapel of the Seven Sleepers, excavated in the form of a cross in the hillside overlooking Marmoutier (Indre-et-Loire) and recalling the memory of St. Gatian the apostle of Touraine, and St. Martial's hermitage at Mortagne-sur-Gironde.

South of Cæsarea in Cappadocia there are about a hundred churches and chapels, richly decorated with frescoes, dating from the eleventh and twelfth centuries; a remarkable series of monuments, Byzantine in style, cut out in projecting rocks and in mountain-sides. Some of them, such as Tokale Kilissé and Ecmale Kilissé at Gueuremé are of great size. It is somewhat remarkable that, although there was no necessity for these churches to follow the architectural forms necessary to a church built stone by stone, yet they do so, and with their domical and tunnel vaults, their bays and nave

arcades are a close imitation of them. We find this same characteristic in the cave churches of France, and although we do not, on that account, postulate any connection between them and those of Cappadocia, the fact shows strikingly how the builders of different countries, having to solve the same problems, with the same end in view and in similar conditions, reach the most similar results.

The three best known rock churches are situated at no great distance from each other, at Gurat and Aubeterre (Charente) and at St.-Emilion (Gironde). With allowances for the special conditions ruling their construction, they are, in plan, copies of ordinary Romanesque churches. There can be no question of the orientation of such churches, cut in a hillside, nor can there be windows on more than one side, or at most, as at St.-Emilion, on two adjacent sides of a square. At Aubeterre the apse is towards the north. Here also and at Gurat there is one side-aisle only, but St.-Emilion, the finest of the three, has two side-aisles, but a square eastern end. The vaults, which are of tunnel shape, but of little regularity, rest upon capitals. At Aubeterre there are polygonal columns, at Gurat they are round, but at St.-Emilion the supports are massive piers, square on plan.

These different kinds of support allow us to classify the first two churches with the Romanesque buildings of the south-west, while the third belongs to the Perigord school of St.-Front. Bell-towers crown the rocks in which these churches have been constructed.

Apart from this group rock churches are rare, though caves always had an attraction for our forefathers. Illustrations of this can be seen in the cave-

chapels at Balme (Isère) of the twelfth century, at Vals (Ariége) and at Rocamadour (Lot).

Though the Gothic builders continued to make use of caves, as at the Madeleine of Panzoult (I.-et-L.) where a natural cavern in the hill forms the apse, it was not until 1670 that another real cave church was constructed, to wit that of Haute-Isle (Seine-et-Oise), cut out of the chalk, without aisles, and with a tunnel vault.

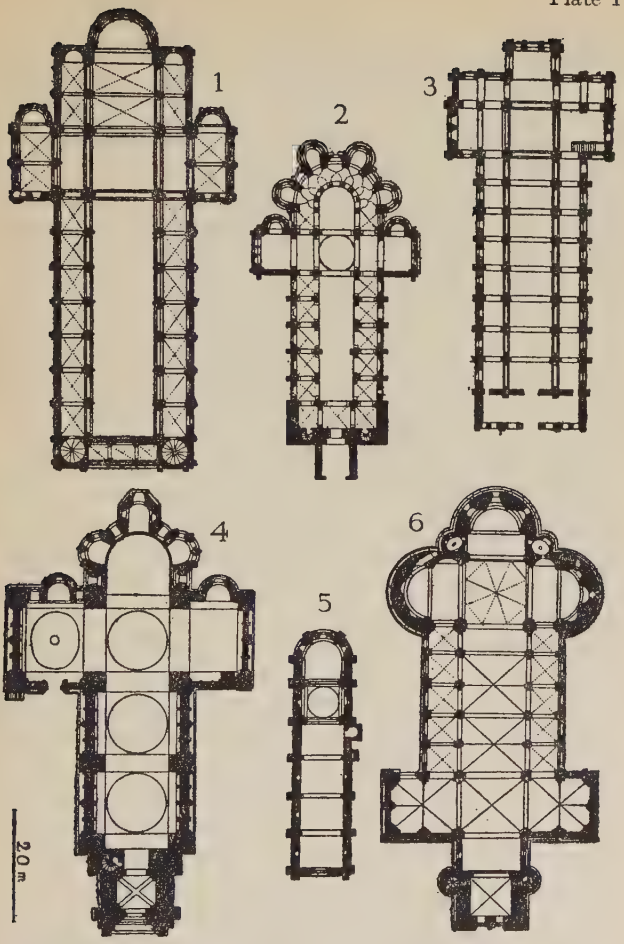
III. The Complete Plan

It is admitted that the vault was one of the determinants of the plans of Romanesque churches. Hence it is that north of the Loire, where vaults are not common, the predominant type of church is the aisled structure, whereas to the south, where vaulting was employed from an early period, there are large numbers of aisleless churches. There are, however, many exceptions to this rule.

In the simplest plan we have a nave without aisles, with, as a rule, an apse that may be semi-circular (Plate IV, fig. 5) or polygonal, or, occasionally, a square eastern end. This simple plan is rarely employed for large churches, though Les Saintes Maries and Rétoux (Charente-Inf.) are examples of its use.

This rudimentary plan is most usually developed by the addition of a transept, with minor apses opening from it and from the choir, a plan as common in small churches (St. Paxentius [Vienne]) as in the great domed churches of Aquitaine (Solignac [Plate IV, fig. 4] and Angoulême cathedral).

A further development is the addition of aisles, varying in size from mere passages to veritable



1. St. Nicolas (Caen), Benedictine or Norman plan. 2. Notre-Dame du Port (Clermont-Ferrand), choir with ambulatory. 3. Fontenay (Côte-d'Or), Cistercian plan. 4. Solignac (Haute-Vienne), aisleless church, apsidal chapels opening directly on to choir, nave roofed with domes. 5. Claix (Charente) no aisles or transept (the scale of this is double that of the other plans, the church being only about 71 ft. long). 6. Cologne, The Holy Apostles, two transepts, choir of trefoil plan.

supplementary naves. An aisled church may lack a transept (Notre-Dame-la-Grande, Poitiers), its choir may or may not have an ambulatory. The usual number of aisles is two, but sometimes there are more, St. Sernin, Toulouse, having four.

The Cluniacs often built their abbey churches on a special plan (Plate IV, fig. 1), known as the Benedictine plan, of which St. George, Boscherville (Seine-Inf.) is an example. This must not be taken to mean that such a plan was used exclusively by them, or that they invented it, for it was employed in secular churches as well, such as the cathedral of Autun (Saône-et-Loire) and the collegiate church of Châteaumeillant (Cher). It is characterized by an elongated eastern end, flanked by deep apsidal chapels opening into the transept and separated from the choir by an arcade, though this is sometimes replaced by an unpierced wall; Jumièges (Seine-Inf.) and Hirson (Aisne). The apsidal chapels are generally round-ended, or alternately square and round. This Benedictine plan is common in England (St. Mary's, York) and is found so often in Normandy that it has sometimes been called the Norman plan. In Germany also and in Berry it is common, but elsewhere it is more rarely to be seen.

A more peculiarly monastic plan is that used in the great Cistercian abbeys, though this again originated in the secular churches of Burgundy, whence the Cistercians, founded at Citeaux in 1098, adopted it. Most of their churches are characterized by their great simplicity and the predominance of straight lines and right angles in the plan (Plate IV, fig. 3). The choir is square-ended, rectangular chapels open from the east of the transept arms, and these chapels are, as a rule, walled off from each

other, though occasionally separated by an arcade (Fontenay). The side aisles are but narrow passages; Fontenay, Noirlac (Cher), Hauterive (Switzerland), Alvastra (Sweden). Each bay of the aisles has a tunnel vault set at right angles to that of the nave, so as to form a series of communicating chapels, though in a few cases, as at Silvanès (Aveyron), the bays are completely cut off from each other by solid walls supporting the lateral vaults. The Cistercian church of Thoronet (Var) is exceptional in having a semi-circular choir and transeptal chapels of the same form, though the latter are built into the thickness of a straight exterior wall.

Towards the end of the twelfth and in the thirteenth century some of the greater abbey churches, such as Pontigny (Yonne) and Clairvaux (Aube) were provided with an ambulatory encircling the choir and giving access to a series of non-communicating radiating chapels.

As we have seen, a special feature of many Rhineland churches is the existence of an apse at each end (Plate IV, fig. 6). The Romanesque builders copied this arrangement from their Carolingian predecessors, and it is possibly even older. It is illustrated at Maria-Laach, Bonn and Trier (cathedral). The western apse was used to hold the shrine or relics of the Saints (Plate IV, fig. 6).

This double-apsed plan is found elsewhere, as at Garde-Adhémar (Drôme), St. Cyr (Nevers) and San Lorenzo (Milan). At Cologne in the Church of the Apostles the eastern end is trefoiled, while the western is square and has its own transept.

This trefoiled east end is found oftener in the Rhineland and in Lombardy than elsewhere. As a rule it is formed by a semi-circular apse flanked by

two other half-circles of the same size with their axis at right angles to that of the nave. St. Mary's im Capitol at Cologne has this arrangement at the end of the side-aisle, which is exceptional.

This trefoil plan is rare in France and Spain; examples of it are at St.-Martin-de-Londres (Hérault) St.-Maurice-en-Gençay (Vienne) and Sta Lucia at Gerona.

Finally a few great churches, not of the Rhineland school, have or had two transepts, e.g. Cluny, St.-Benoît-sur-Loire, St.-Sernin (Toulouse) and Souvigny (Allier).

CHAPTER III

SPECIAL PLANS

A NUMBER of churches are built on plans wholly different from the basilican. Generally these follow the plan of some specially celebrated and venerated sanctuary, such as the Holy Sepulchre at Jerusalem, which was widely copied. This circular building, the Anastasis, of which we have already spoken, though many times destroyed, was always rebuilt on the same plan. As it was the most venerable church in Christendom, it was natural that pilgrims, who were often the means of spreading architectural ideas, should wish to reproduce it. But the men of the Middle Ages were seldom slavish copyists; every builder had his own way of looking at whatever he wanted to reproduce, and in this case the imitation amounts to no more than the reproduction of the circular plan.

The best known of the churches built in imitation of the Holy Sepulchre were undoubtedly those at Dijon (St. Benignus) and at Charroux (Vienne), both of the eleventh century. Of the former the crypt and the lower part of the church remain, while the central tower is all that is left of the latter. It is, however, possible for us to reconstruct them. Verroux, the larger of the two, consisted of a

central octagonal tower supported by eight columns; the space between these and the external wall was divided into three circular galleries or aisles by two circles of columns. It was built in two storeys. Such churches being ill adapted to the purposes of worship, the twelfth-century builders often tried, by structural modifications, to bring them more into line with the basilican type of church. At Charroux they added a choir with an ambulatory and five radiating chapels, a nave with two side aisles, and a narthex, giving to the whole building a length of 434 feet. The much smaller but better preserved church of Neuvy-St.-Sepulchre (Indre) was treated in much the same way. The severe and much restored round church of Quimperlé has a circular aisle and three small apses—the middle one somewhat longer than the others—vaulted with semi-domes.

Mention may also be made of St. Sepulchre's at Cambridge, of the San Sepolcro of Bologna, which with six other churches makes up the conglomerate San Stefano, and of the small chapel of St. Leonard (Haute-Vienne) with four small apses opening from the circular aisle, which is divided from the central part by four piers. Finally there is St. Michael's at Entraigues (Charente), a simple octagon with a semi-domed apse opening from each side.

This circular plan, never widely adopted in France, except for small buildings, does not seem to have found favour for any churches of importance after the eleventh century. The Knights of the Temple used the circular plan for their churches in honour of the Holy Sepulchre. As examples of this widespread custom we may mention the ancient ruined chapel of Lanleff (Côtes-du-Nord), which has aisles, and the aisleless, octagonal church of Laon, a charm-

ing building with a square porch and an east end formed of one square bay and a semi-domed apse. Then there are the Temple churches of Paris (with aisle and tribunes), of London, Cambridge and Northampton, of Pisa, of Segovia (Spain) and of Thomar (Portugal).

The octagonal church of Montmorillon (Vienne), which, when built, belonged to a hospital served partly by secular priests and partly by Augustinians, is, like many funeral chapels, built on a radiating plan. It is in two storeys, the lower having been used as an ossuary. Other examples of a more or less similar type are the small round chapel attached to the cemetery of Chambon (P.-de-D.), that of the Chartreuse at Liget (Indre-et-Loire), the octagon of St. Clair at the foot of the " needle-rock " at Le Puy. Many of these round chapels are dedicated to St. Michael, such as Sant' Angelo at Perugia, and the above mentioned St. Michel at Entraigues, and many are built upon heights, as Mount St. Michael in Cornwall, and St. Michel d'Aiguilhe at Le Puy, though here the original quatrefoil plan has given place to one that is practically square.

Besides the Holy Sepulchre there were also other buildings that were more or less extensively copied. The splendid Byzantine church of St. Vitalis at Ravenna, modelled upon certain Greek *martyria* and such circular churches as SS. Sergius and Bacchus at Constantinople, was imitated in many places in Northern Italy, and it was from these buildings that the architect of the palatine church at Aix drew his inspiration. In the Romanesque period this monument, its fame enhanced by Charlemagne's prestige, became a favourite model for imitation.

Three of the most faithful copies are the

octagonal churches of Ottmarsheim (Upper Rhine), of the hospital of the Trinity at Wisby in the island of Gottland, and of the château of Nijmegen (Holland). In these each story consists of an alternation of rectangular and triangular bays; there are tribunes over the aisles, a square apse, and a porch with one or two stairways.

In some cases, as in the Duomo Vecchio at Brescia, St. Michael at Fulda and at Mettlach, the imitation is so faint that it cannot be proved without documentary evidence. But as there were many kinds of round churches an architect may well have drawn his inspiration from several different sources.

Round churches are fairly numerous in Scandinavia. That at Olsker (Denmark) has a choir ending in a semi-domed apse and connecting with the rotunda by a straight bay, while at Nylarsker (Denmark) the sides of the rotunda form a trefoil with the sanctuary. This latter church, like a few others, is built in three storeys, the two upper ones being covered with a circular tunnel vault resting upon a central pier. At Bjernede, near Copenhagen, there are tribunes in the rotunda, and a bell-tower.

Baptisteries

In the early centuries of the Church there were a large number of baptisteries built on an octagonal or circular plan. As Christianity spread, the number of catechumens led to many breaches of the rule which limited the administration of Baptism to the Bishop, and of the custom of conferring the sacrament only in a building erected specially for this purpose near the cathedral church. When the see was vacant or the catechumens lived afar off, there was the danger of their dying without Baptism, so

that gradually towards the sixth century, priests in country parishes were allowed to baptize. Naturally they did it in their churches, without troubling to erect special buildings; gradually this became the usual custom, so that, towards the time of Charlemagne, but few baptisteries were built. In the Romanesque period the ancient custom of building them in the episcopal city was followed in only a few Italian cities, and possibly in the south of France, as at Mélas (Ardèche).

Among others we may mention the octagonal baptistery at Florence, one of the masterpieces of the twelfth century (the marble casing was added later); that at Pisa, begun in 1153 by Dioti Salvi, but not finished until the fourteenth century, and those of Verona and Padua. None of these have aisles. In Catalonia, where baptism by immersion was practised until the eleventh century, we may note the baptistery of Tarrara, square with rounded corners, with an aisle and an apse with horseshoe arch, the whole enclosed in a seven-sided wall.

Trefoiled Buildings

These are fairly numerous in Lombardy, e.g., the baptistery at Biella and the church of San Lorenzo in Milan, the latter, restored in 1041, a domed octagon with four apses set in a semi-circle. In France but few are to be found. Sainte-Croix at Montmajour (B.-du-R.), of the end of the twelfth century, consists of a square bay, vaulted, flanked by four small apses. At La Baume de Transit (Drôme) and at Schwartzheindorf near Bonn (dedicated in 1137) modifications have been made, one of the four apses being replaced by a nave.

Finally we may note the church of Planès (Pyr.-

Or.) the general form of which is a cusped trefoil, or rather a triangle, each side being taken up almost entirely by an apse, two of the angles by small apses, and the third by the door. The central part is domed.

CHAPTER IV

THE ELEVATION OF ROMANESQUE CHURCHES

Supports

The wall is the principal support, but it has columns and piers as its auxiliaries. The column is round, and may be either built up or a monolith. It is employed both inside and outside the church. In size it varies from the small and slender columns supporting the recessed arches of a door to the huge and heavy nave columns of such a church as La Sauve (Gironde). In shape it may be round or polygonal (e.g. in the tower of St. Trophime at Arles); twisted, as in the south door of St. Lazare at Avallon and in many Italian churches (e.g. cloisters of St. Paul outside the Walls at Rome); fluted (St. Gilles [Gard]), with or without entasis or bulge, with its surface plain or ornamented with sculpture as at Coulombs (Eure-et-Loir). Fluted and bulged columns are generally either of Roman workmanship and taken from ancient buildings or imitations of them. In the former case, if intact, they are monoliths, and the neck on which the capital rests is part of the column. Sometimes the builders, using the materials at hand, built up their columns out of fragments of older ones, a practice common in Italy, where the ruins of Roman buildings were abundant and broken marble columns

plentiful. In England the decoration of the shaft is common (Durham).

As a general rule columns are not much used to support the main arcades and divide the nave from the aisles, especially in vaulted churches. In this, however, exceptions must be made for Italy (for the reason already mentioned), Catalonia, and the Rhineland (Rosheim). Elsewhere their employment is rare (Lichères [P.-de-C.], St. Nectaire [P.-de-D.]). It is rare also to find monoliths used in a nave; at St.-Pierre-au-Parvis (Soissons), where they are used, the roof is not vaulted. Standing at right-angles to the bed of the quarry they are liable to fracture by the weight pressing upon them; hence they are usually built up of superimposed sections or drums, or sometimes of half sections.

On the other hand, the columns dividing the choir from the ambulatory, being subject to a much smaller stress from the tunnel vaults they support, and being set much nearer to each other, may and should be of lighter construction. Consequently they are often monoliths. In some instances where strength has been sacrificed to lightness, subsequent reinforcement was necessary, as at St.-Léonard (Haute-Vienne) where alternate columns of the choir have been built up into piers. To remedy this defect and carry a heavier weight, columns were often grouped in pairs or even in greater numbers according to the thickness of the wall to be supported, a practice commonly seen in cloisters, e.g., Aix, St. Paul *fuori* (Rome), St. Paul (Barcelona). At Bois-Ste.-Marie (Saône-et-Loire) the choir is surrounded by six groups of four columns. In crypts monolith columns are often to be seen, e.g. Champdeniers (Deux-Sèvres).

The small columns, such as those used in wall-arcading, in cloisters, doors and windows, all, in fact, that have but little weight to carry, are often monoliths. Sometimes they stand immediately against a wall and serve a simply decorative purpose. Others, called engaged columns, are formed of half sections and bonded into the wall or into rectangular projections from it.

Piers, though often resembling columns in appearance, are of different construction, being composed of rubble and cement instead of ashlar, and, on plan, not being of circular or quasi-circular form. They are generally used to support the high vaults, which are of great weight, and they have the further advantages of being less costly and less difficult to construct. By way of exception circular piers are sometimes to be seen, as at Tournus (Saône-et-Loire), occasionally carrying capitals, as at St.-Savin-sur-Gartempe (Vienne) and Sant-Abbandio (Como), but they are the work of builders captivated by the beauty and simplicity of the column.

Piers are of many forms. They may be simple, either circular on plan, like those just mentioned, or square as at Vignory (Haute-Marne) and Leoncel (Drôme). At Saint-Front (Périgueux) they are pierced by passages. They are often cruciform on plan and not infrequently flanked by projecting columns or half-columns, the whole structure corresponding logically with the recessed orders of the arches and with the transverse arches springing from it. Simple piers of small dimensions are often constructed of solid courses of stone, but when composite or of great thickness they are generally built in the same way as the walls, namely, with a core of rubble and a facing of dressed stone. At Vignory

we have simple piers, which is quite logical, for the arches of the nave are simple and unrecessed, and, the church not being vaulted, there are no transverse arches. But as a rule piers are composite, with one or more projecting shafts, or cruciform (Trier cathedral) to carry main and transverse arches. If the arch has two orders the pier also will have a second attached shaft as in the nave of St. Lazare, Autun. With the growing number of ribs springing from the pier the latter becomes more complicated in plan; at Preuilly-sur-Claise (I.-et-L.) a square pier is flanked by four engaged columns, one carrying the transverse rib of the nave vaults, another that of the aisle vaults, and the other two carrying the pier arches. Or again a pier may be formed of a whole group of attached columns, with four right-angled projections to show that it is a pier (a form common in Poitou), while sometimes these are missing, and every angle is occupied with slender engaged or attached columns or shafts. Another custom is to use columns and piers alternately, as at Rosheim (Rhineland), or massive and slender piers, as at Bernières-sur-Mer (Calvados), a logical practice in churches where one bay of the nave corresponds to two bays of the aisles, as is frequently the case when the aisles alone are vaulted, e.g. Jumièges (Normandy) and elsewhere in this province, as well as in the Rhineland and Lombardy.

This division of the pier into columns, first adopted to avoid clumsiness, as is evident from the church of St. Remy at Rheims (first half of eleventh century), and then used to establish consistency between the pier and the ribs springing from it, is one of the Romanesque builders' happiest inspirations. It often enables us also to reconstruct

mentally a ruined church, or to discover the original arrangement of one afterwards modified, for the planning of the piers gives the key to the nature and disposition of the upper structure.

At the beginning of the eleventh century, when very few naves were vaulted, the piers are simple in plan, though many forms are already to be found, the alternation of massive and slender at Jumièges, the square at Vignory (*c.* 1045), the round at Froville (Meurthe-et-Moselle), and even the square with four attached columns in the crypt at Auxerre (*c.* 1030). From the middle of the eleventh century the more developed forms of the compound pier appear, as in the Abbaye-aux-Hommes at Caen; in the twelfth century all the forms are found, and though simplicity may be an indication of early date, it is not a proof.

Finally, we may note that it is exceptional to find piers, even alternately with columns, as at Cunault (Maine-et-Loire), used to support the vault of the ambulatory around the choir.

Arches, Nave Arcades

The arch most commonly used was, undoubtedly, the round or semi-circular. Though the Byzantine builders had already adopted the arch instead of the architrave, it was for long commonly thought that the round arch was characteristic of Romanesque, while the distinctive mark of Gothic was the pointed arch, wrongly called ogee. Then when it was seen that the pointed arch was used by Romanesque builders, it was supposed that this was an indication of a transitional period of architecture, but the researches of Lefèvre-Pontalis have caused this idea to be given up. As a matter of fact, not only was

the pointed arch employed from the beginning of the twelfth century, but in certain districts, such as Burgundy, Provence and Poitou, it is sometimes the commoner form.

In construction it is a two-centred arch, all the voussoirs are alike, and the two sides meet at the top in a vertical joint, no keystone being used (except occasionally in the Rhineland), probably because of the greater difficulty of cutting. In the tenth and eleventh centuries, until towards 1080, arches are constructed with a large number of flat voussoirs, with thick joints of mortar, a practice which, while not altogether universal, shows the persistence of Merovingian and Carolingian methods, and is probably a survival from the days when they were built of flat rectangular bricks (Baptistery of St. John at Poitiers, seventh century, and the arcade of the tower of St.-Germain-des-Prés, eleventh century). Later on, voussoirs of greater size were used.

The pointed arch has two advantages over the round arch. It exerts less lateral pressure and its use enables spaces of different widths, e.g. the bays of nave and choir, to be spanned by arches of the same height. The only other way of attaining this result is to employ stilted arches for the narrower span, the method employed in the choirs of Fontgombault (Indre) and St. Hilary at Poitiers; but the effect is far less pleasing.

Mention may also be made of the horseshoe arch, rare in France (Le Puy, cathedral) common in Spanish Mozarabic building (San Miguel de Escalada) and of the trefoiled (tribune of Notre-Dame at Clermont) and multifoiled arch (Petit-Palais [Gironde]), which seem to have been influenced by

the Arabic architecture of Spain. The straight-sided arch, greatly favoured by the Merovingian (Baptistery at Poitiers) and especially the Carolingian builders (Cravant [Indre-et-Loire]), is rare in Romanesque building, and from the twelfth century is hardly to be found except in the transepts of some churches of Auvergne (Plate VIII, fig. 4) and some bell-towers of Central France.

We have already seen that, until the end of the eleventh century, the only arches to be found, as far as can be ascertained with certainty, are round-headed, with, except in Catalonia, but few of horse-shoe form (Tournus). The nave arcades of this period are either simple (Chateau-Landon [Seine-et-Marne]), or recessed in two orders only (St.-Etienne, Nevers). The edges of the arches are left sharp as a rule, only occasionally being softened by a torus molding (St.-Etienne, Caen), while a curious feature that becomes rare in the twelfth century and is not found after about 1125, is that the inner part of the arch is often of rubble, the edges alone being of worked stone.

These are the principal architectural features of twelfth century arcading. It is rare to find an arch recessed in more than two orders or with an elaborate molding (Bayeux cathedral), but the pointed arch is of fairly frequent occurrence, especially after 1125, and in Poitou and Burgundy (Paray-le-Monial [Saône-et-Loire]).

The transverse arch is employed to uphold the vault transversely, that is across the nave or aisle, while another support for the vault sometimes found, especially in Burgundy (Vézelay), is the wall-arch that is bonded into the wall from bay to bay along the nave.

Tribunes, False Tribunes, Triforium, Wall Galleries

Above the nave arcades are often built galleries or tribunes opening on to the nave and lighted from it by windows. These are sometimes single lights (St.-Etienne at Caen), but more often double with a central column supporting two arches (Bari cathedral [Italy], Cérisy-la-Forêt [Manche]), or even triple (Notre-Dame, Clermont), and often with a discharging arch above (Jumièges). The external wall is also pierced with windows to light the tribunes.

The tribunes are often carried over the aisles, especially in great pilgrimage churches (St. Sernin, Toulouse), in churches where the central vault is buttressed by the lateral vaults of the aisles (Auvergne and Burgundy), and in districts where the vaulted nave is rare (Normandy, Rhineland, Lombardy). Very often, though the aisle be vaulted, the tribune is not, as at St.-Etienne, Caen, where the half-tunnel vault covering the latter is a later addition. In Normandy vaulted tribunes are rare (Jumièges, groined vaulting), but they are usual in Burgundy and Auvergne, in the latter district being often of the half-tunnel variety. In South-Western France tribunes extending over the aisles are not found (Plate IX, fig. 1).

Over the west door there is often a chamber, sometimes of considerable size. This may be the second storey of a porch (St. Savin-sur-Gartempe [Vienne], where the porch is the ground floor of the tower), or a simple parapeted gallery, as at Semur-en-Brionnais (Saône-et-Loire), where, towards the nave, there is a semi-circular enlargement, meant, no doubt, to take an altar dedicated to St. Michael.

Tribunes are also built over the transept, especially in Normandy (St. Georges-de-Boscherville [Seine-

Inf.]), over the narthex (Vézelay [Yonne]), and over the aisles of round churches of the type of Aix-la-Chapelle and Charroux.

Sometimes the architect, not wishing or not venturing to construct tribunes, has replaced them by false tribunes, mere wall arcadings resembling tribune openings, and acting as ventilators to the roof chamber (St.-Benoit-sur-Loire, Beaune, Le Mans).

The triforium is a high and narrow gallery which never extends more than a little way above the aisles; it may indeed be constructed within the thickness of the wall, and so is occasionally found even in aisleless churches. It opens into the nave in the same way as the tribune. Many churches have both tribune and triforium. At Vignory is a false triforium, the upper wall being pierced by openings which seem to give on to a gallery, but in reality are simply the ends of passages effecting communication between nave and aisle.

Finally we have wall galleries, narrow passages, without any balustrade, constructed in the thickness of the wall, beneath windows and behind piers. They are common in Normandy (Boscherville, Lassay) and in the domed churches of the south-west, e.g. Gensac (Charente) and Angoulême cathedral; they are sometimes built at the base of a dome (St.-Etienne, Périgueux) and occasionally round the choir (St. Nicholas, Caen).

Windows and Other Wall Openings

There is a close relation between the clerestory windows and the vaults. In churches which follow the basilica tradition of timber roofs the clerestory windows are generally large, but where a stone vault presses heavily on the walls they are small and

narrow. Again, where the nave vaults are abutted by the lateral vaults of the aisles, the builders found a difficulty in piercing the nave wall for windows, though an exception must be made for Burgundy, where at an early date the builders boldly raised the central vaults to a great height and were thus able to let plenty of light into the nave (Vézelay). Elsewhere they were content with the light provided by the windows of tribunes, side aisles and east and west ends (St. Ambrose, Milan [Plate x, fig. 1], St. Saturnin [P.-de-D.]). Where the side aisles are covered with tunnel vaults set transversely the lighting problem is simplified, as the aisle windows may be carried up almost to the top of the vault (Fontenay, Côte-d'Or).

In Normandy, Lombardy and the Rhineland windows are pierced in the lantern tower to light the transept crossing. In Provence and the neighbouring districts the prevalence of the *mistral* and the abundance of bright sunshine account for the fewness of windows and their occasional absence from one side of a church (Cruas, Mélas [Ardèche]).

To increase the amount of light the Romanesque builders adopted the device of splaying the window openings. The opening is glazed or shuttered close to the outer surface, and towards the interior has a wide splay. Occasionally also there is a slight outward splay. The splayed sill, generally plain, is sometimes in the twelfth century constructed stepwise (St. Pierre de Melle [D. Sev.], Plate ix, fig. 1).

According to Enlart this was done so that the dust might settle on the treads, leaving the fronts of the steps, the only parts to be seen, always clean; but the effect would be quite otherwise when the windows are low, as in the crypt of Lusignan (Vienne). In

those districts that kept to the basilican tradition of thin walls, as in the Pisan churches, there is no splaying of the windows. The inner surface of the window-opening is either plain, especially in the eleventh century (a survival of the Latin type), or set with small shafts level with the wall, upholding the extremities of the arch (St.-Benoit-sur-Loire), which is often decorated with a molding. As a rule the choir windows are more ornate than those of the nave. They are often placed within an arcading which may enclose several separate small windows or one large one (Paray-le-Monial). Windows arranged in pairs or triplets are common everywhere, especially in gables.

Occasionally also, as early as the eleventh century, the gable wall (St.-Martin-du-Canigou and Bussière-Badil [H.-V.]), and more rarely some other wall (ambulatory of the Couture du Mans and St. Sernin at Toulouse) is pierced with one or more circular openings. Small at first, this " O " developed finally into the " wheels of fortune," such as the well-known one of St. Etienne at Beauvais, adorned with tracery representing the spokes of a wheel. The circular molding is covered with figures in high relief of men and women, who on one side climb towards a king enthroned at the summit, while on the other they are being cast down to earth, thus illustrating the allegory of Boethius. The wheel window is the forerunner of the Gothic " rose."

Wall Arcades

A common form of decoration is the wall arcade or blind arcade, which is used more or less everywhere, but particularly around the choir (La Charité-sur-Loire [Nièvre], Preuilly [Indre-et-Loire]), and

in Poitou to decorate the wall of the ambulatory (Montierneuf, Poitiers). Where there is no tribune or triforium, wall arcading is frequently employed as a decorative substitute.

Transept

The transept, as we have seen, is not universal. The bay of the nave from which the transept opens is often of a greater height than the other bays, and frequently carries the central tower [Bois-Sainte-Marie (Saône-et-Loire), Notre-Dame-des-Doms (Avignon]. It is unusual to find the transept less lofty than the nave, as at Gassicourt (Seine-et-Oise), Fontenay and Santander (Spain), but by no means rare to find it carried to a greater height, nor does it always extend beyond the side walls of the church.

The transept crossing is often covered by a dome, which sometimes rests upon a lantern (Civray [Vienne]), the latter having no vault (the usual English custom). In great pilgrimage churches, such as St. Sernin at Toulouse, the transept arms have often their own side aisles, but otherwise this feature is not common. In Normandy the arms are occupied by tribunes, each supported by a single pier (Boscherville, St. Georges), and in many pilgrimage churches the nave tribunes are carried round into the transepts, which at Bayeux and Solignac and elsewhere are provided with wall galleries.

In the cruciform churches of Auvergne the transept arm consists of two bays, the second extending beyond the side walls, the first corresponding with the aisle (Plate VIII, fig. 1). The latter, loftier than the former, is roofed with a half-tunnel vault serving to abut the dome over the crossing. If the transept arm has one or more apsidal chapels they

project, as a rule, towards the east. Sometimes they are built in two storeys (St.-Ouen at Rouen). In churches built on the Benedictine plan these transept chapels are divided from the choir by the pier arcade. The transept wall is often decorated with wall arcading, a form peculiar to Auvergne consisting of a straight-sided arch between two round-headed ones (Plate VIII, fig. 4). Windows are pierced in the upper parts of the walls.

Choir

No matter what the shape of the choir it may be ornamented with wall arcades, as at St.-Jean-du-Montier at Arles. In many churches of Lombardy and the Rhineland, instead of arcades there is a row of niches (Plate X, fig. 3), a device which affords support to the vaults without the aid of buttresses. The upper parts of the choir wall have windows or arcading or both (Preuilly). Some Norman churches have wall galleries around the choir; but where there is an ambulatory there is no tribune; in this Avila cathedral is exceptional. The vaulting is usually of the tunnel variety over square bays, and semi-domes over semi-circular spaces. Most commonly the ambulatory is roofed with groined vaulting, but sometimes the tunnel vault is employed and very occasionally this is planned crosswise. Wall arcading is used to ornament the walls of apsidal chapels, which are also pierced with window openings.

CHAPTER V

ROOFS

I. Timber Roofs

Before the Romanesque builders gained sufficient confidence in their skill to risk covering the naves of their churches with a stone vault, they followed the basilican practice of roofing them with timber. Before the middle of the eleventh century very few naves were vaulted, as is shown both by the buildings themselves and by documentary evidence; the builders were still afraid of raising so weighty a structure above their walls, and indeed, in certain districts, especially north of the Loire, the custom of covering the nave with a roof or ceiling of timber persisted for a long time.

Romanesque timber roofs are of somewhat rudimentary construction, consisting of trusses composed of rafters and tie-beams sometimes stiffened with a king-post, queen-posts and small cross-ties, but their characteristic feature is that there is no ridge-beam binding each truss to its neighbour, the only link between them being the battens to which the tiles are fastened; e.g. St. Maur-des-Fossés of the eleventh century and St. Pierre-de-Montmartre and Chivy (Aisne) of the twelfth century.

When the nave is vaulted, either the external walls must be raised or the timber work must be modified to prevent it from resting directly upon the vault, already quite heavy enough in itself, especially at the summit, where the risk of fracture is greatest. The Romanesque builders resorted to the expedient of binding the rafters with collar-beams, not a judicious procedure, for the rafters are less firmly stayed and there is a danger of their displacing the upper courses of the walls.

In the south of France the tiles are sometimes set directly upon the haunch of the vaults (St. Nazaire at Carcassonne).

II. Vaults

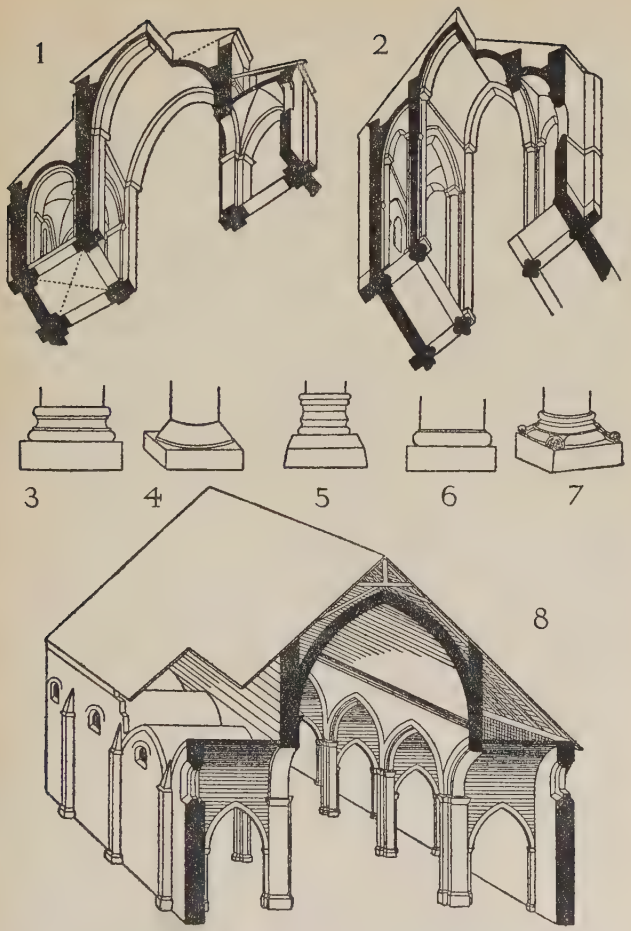
The Beginning of the Vault

The West, after the barbarian invasions, never lost altogether the knowledge of the art of vaulting. Roman buildings were numerous and naturally invited attempts to copy them. The Merovingian crypt at Jouarre has a groined vault, that of St. Lawrence at Grenoble is tunnel-vaulted. The Carolingian builders also constructed various kinds of vaults, but it is rare to find a whole building vaulted, or one of the basilican type. Basilicas of that date have vaults covering small spaces only, such as side-aisles, or choir, or perhaps some small chapels, as at Tournus (Saône-et-Loire) dating from 960.

In Catalonia, however, the tunnel vault appears at an early date; the small church of Sta-Maria at Amer was certainly vaulted as early as 945, while the nave of the great church of Ripoll, consecrated towards 1025, was already roofed with a tunnel vault at that date. The Catalan school, however, was exceptional;

it probably owed its early maturity to the proximity of the Arab kingdoms, whence Eastern methods of building were diffused. Yet if we are to judge from the strictly limited diffusion of those forms of decoration peculiar to Catalonia, it would seem that Catalan influence was of little account, and it would be rash indeed to regard all the Romanesque vaults of later times as derived from those early vaults of Catalonia.

The earliest known French vaulted nave is that of St. Gildéric at Lavardin (Loir-et-Cher) of about 1042; henceforward they become more frequent, e.g. Lesterps (Charente) of about 1055, Moissac (F.-et-G.) and others. Nearly all types of vaults were employed at one and the same time, e.g. longitudinal round tunnel vaults, with or without transverse arches (Lavardin and Lesterps), transverse tunnel (Tournus, 1090), groined vaults (side-aisles of Orleans cathedral) and even vaulted domes resting upon rudimentary corbelling over the transept crossing (St. Martin at Angers, 1020). In the twelfth century the vault, in all these forms, made its way even into those districts which had hitherto resisted it. In Northern France, Normandy and the Rhineland this unwillingness to adopt the vault may be attributed to the necessity of providing large window openings for lighting purposes, but Italy and Corsica, lands of abundant sunshine, acted in the same way rather from conservatism, clinging to the basilican tradition of timbered roof and panelled ceiling. It was not until the cross-ribbed vault made its appearance that they gave up the old ways. Even then some of the sun-drenched countries for long preferred to use the darker tunnel vault so well suited to their climatic conditions; and, as we have seen, some of the churches of Provence went so far in their quest for



1. St. Loup (Naud). Nave, round tunnel vaults on transverse arches; aisles, groined vaults. 2. Parthenay-le-Vieux. Nave, pointed tunnel vaults on transverse arches; aisles, half-tunnels. 3, 4, 5, 6, 7. Bases: Hollow between two rolls; glacis; superimposed rolls; single roll or bowtell; spurs. 8. Cistercian ch., Bonmont (Vaux, Switzerland). Nave, pointed tunnel vaults, abutted by cross vaults of aisles.

the dim religious light as to block or omit half of their windows.

The Tunnel Vault

This variety of vaulting, already known in Asia Minor and employed in numberless Roman monuments, is that most commonly used by Romanesque builders. On analysis it resolves itself into an arch indefinitely prolonged along the line of its axis. Hence, the builder who can construct an arch can also build a vault. The Romans made their vaults of concrete, which quickly became one solid mass, stiffened with linings of bricks and tiles. But the Romanesque vault is, as a rule, elastic rather than rigid. That of St.-Martin-du-Canigou (Pyr.-Or.), which may date from 1005, is of this type, while some much more highly developed buildings, such as the churches of Auvergne, have simple rubble vaults. As a rule, however, the Romanesque vault is not constructed of a mere mass of concrete or rubble. It is carefully arranged and articulated with rag or roughly dressed rubble, set after the fashion of voussoirs with convergent joints. All the vaults that, so far as our present knowledge goes, can be assigned to the eleventh century, are semi-circular; afterwards, however, in some districts, they are often two-centred and so pointed, the thrust being thus lessened. In Poitou (St.-Pierre at Chauvigny and Notre-Dame-la-Grande at Poitiers), in Burgundy (Vézelay and Paray-le-Monial) and in Provence (St.-Trophime at Arles and St.-Paul-trois-Chateaux) both forms are used side by side. The vault is used throughout the building, over nave, aisles, transept arms, porch, ambulatory. In some schools, Auvergne for example, as at Notre-Dame-du-Port,

the face of the vault is unbroken throughout its length; it is thus almost, in effect, a monolithic mass, and its pressure is almost wholly vertical; elsewhere, transverse arches, often one to each bay, are used to support the vault [Bussière-Badil (Haute-Vienne), Autun (Saône-et-Loire), St. Etienne at Nevers, Parthenay-le-Vieux (Deux-Sèvres)], and occasionally these are recessed [Vaison (Vancluse), Beaune (Côte-d'Or)]. They serve as permanent centreing, give rigidity to the vault, and carry down some of the weight on to the piers. The defects of the tunnel vault are that it tends to sag at the top, and at the same time exerts a considerable lateral thrust upon the walls.

It was only slowly and by painful experience that the Romanesque builders learned how to correct these defects, and the records tell us of many vaults collapsing into the nave. Sometimes the transverse arch, instead of being in immediate contact with the vault, carries a low gable wall, upon which the vault, or the timber roof rests, a device known to the Easterns and employed also in Normandy (Cérisy-la-Forêt, Plate IX, fig. 3) and Lombardy (Lomello, Italy).

Both the Roman and Byzantine builders had made use of the transverse arch, which was employed also in Syria to support a vault formed of large slabs, and therefore a wholly different thing from the Romanesque vault (Necropolis of Hass, N. Central Syria), but in Asia Minor it was used in a way very similar to that with which we are familiar.

It was already in use in the eleventh century, but as it proved quite insufficient to carry vaults of any great span, it was found necessary to buttress the walls, which is more economical than the alternative

of finding the necessary strength in increased thickness. The Romans had buttressed their walls with piers, which sometimes took the form of half-columns (Nîmes amphitheatre), and this form of buttress, which is sometimes found also in Syria (Qualb-Louzeh, Kalaat-Seman, Plate I, fig. 3), was also adopted by the Romanesque builders for the eastern ends of their churches. The Byzantines preferred flat pilaster-strips with connecting wall-arches (Sant' Apollinare-in-Classe, Ravenna), and this device also was adopted in Romanesque building, especially in Catalan and Lombardo-Rhenish churches, but mainly for its decorative effect and so commonly as to become known as "Lombard bands" (Plate X, fig. 2). This kind of arcading, even when given a more than usual projection, did not always remove the necessity of employing the other and habitual sort of abutment. Provence, Auvergne and the south-west were the districts which mostly favoured this form of wall-arcading, which in some places was developed into a system of true discharging arches, receiving the thrust of the vaults and transmitting it to the buttresses without putting any strain on the windows.

A further development was attained when each bay of the side-aisles was covered with a separate vault set at right angles to that of the nave (Plate V, fig. 3); the nave vault is thus efficiently abutted by the aisle vault, the whole of the thrust is carried by the main piers, the walls are relieved, and larger and higher windows can be pierced in them. The Cistercian abbey of Fontenay (Côte-d'Or, second quarter of twelfth century) offers the best-known example of this system, which was widely adopted. Here the vaults are of the pointed tunnel form, with

transverse arches over the nave. This method of vaulting abutment was known in the eleventh century. Most common in Burgundy, it is often met with in central France, and, owing to Cistercian influence, is to be seen more or less everywhere: St.-Etienne-du-Mât (P.-de-C.), le Ronceray d'Angers (M.-et-L.), St.-Etienne-de-Sorède (Pyr.-Or.), as well as in Spain, Italy, Switzerland (Hauterive), England (Fountains) and even in Sweden.

Less frequently transverse vaulting was employed for the ambulatory (Verteuil, Gironde), in which case the plan of the vault is a trapeze and each section is shaped like a split cone. Again, the same system of cross vaulting may be used for the nave, as at Tournus (end of eleventh century). The thrust exercised by the vault of each bay is thus counteracted by that of its neighbours, and the nave walls may be pierced for large windows; on the other hand the perspective and unity of the nave are too much broken up by the successive cross lines, and therefore the method found but little favour.

A much better effect is obtained by covering the side aisles with vaults, whether tunnel (Plate v, fig. 1), pointed, half-tunnel (Plate viii, fig. 2), stilted, or groined, set parallel to the nave axis. To obtain the maximum of equilibrium the vaults of nave and aisles must spring from the same level. This was clearly understood by the architects of Poitou, Auvergne and Catalonia, who constructed vaults of remarkable solidity, but the system has the disadvantage of not allowing the nave to be well lighted, and churches thus vaulted are very dark, e.g. Notre-Dame-la-Grande at Poitiers, and St. Savin-sur-Gartempe. Again it means making the aisles almost as lofty as the nave, an arrangement offensive to the

sense of proportion of many architects, who, in order to remedy the defect as far as possible, resorted to two expedients. In the first place they used half-tunnel vaults for the aisles [Besse (P.-de-D.), Vaison (Voucluse) Plate VII, fig. 1, Parthenay-le-Vieux, Plate V, fig. 2 (Deux-Sèvres)] and secondly, they built the aisles with tribunes above, covering the former, as a rule, with tunnel or groined, the latter with half-tunnel vaults(Notre-Dame-du-Port at Clermont-Ferrand).

The builders of Burgundy, intolerant of the badly lighted nave, boldly carried their nave walls well above the aisle roofs. The excellence of their building stone counted, to some extent, for their boldness, and their splendid naves, well lighted by windows pierced just below the high vaults, justified it [Langres (Haute-Marne), Paray-le-Monial, Plate VII, fig. 5 (Saône-et-Loire)], but the lack of equilibrium, despite the employment of pointed tunnel vaults, has proved a cause of instability often necessitating, in later years, the construction of flying-buttresses to hold up the nave walls (Autun, Cluny).

The Groined Vault

Imagine two semi-circular vaults meeting or cutting one another at right angles. If they are not both of the same span or section, the top of one is lower than that of the other, as a rule, and the smaller penetrates the larger, as we see when a round-headed window with its imposts at the same level as that of the vault is opened into it.

If, however, the two vaults have the same section and are on the same level, they form a regular figure, the junction between the two being called an arris or groin, and the whole known as a groined vault

(Plate v, fig. 1). Such a vault has the advantage of carrying the thrusts down to the four points at the angles of the surface covered, and therefore of allowing the walls to be pierced or built thinner.

On the other hand there is greater difficulty in shaping the voussoirs, as the groin or figure traced by the meeting of any two of the cells of the vault is elliptical.

The groined vault was known to the Romans as well as to the Easterns before them, the Baths of Julian at Paris (Museum of Cluny) being thus covered. The Romanesque builders used many varieties of the groined vault. They gave the groin a semi-circular form, thus producing the so-called domical vault. Over the ambulatory they built a groined vault with unequal sections to cover the trapeze-shaped bays. Finally, to cover an oblong space they constructed groins formed by the meeting of pointed tunnel vaults. Occasionally, even, they carried the groined vault to a certain height and finished it off by building a sort of cupola over the still uncovered space (Nebbio cathedral, Corsica).

This sort of vaulting was sometimes of conglomerate rubble (Auvergne), but oftener of roughly worked stones set in mortar and then covered with cement to hide the irregularities (crypt of Auxerre cathedral).

Occasionally these vaults are carefully constructed of cut stone, but, following the fashion of Eastern vaulting, " the voussoirs forming the groin are not set with joggled joints but in overlaps along the line of the groin, thus saving waste in cutting and avoiding those internal angles . . . where fractures so often begin " (Choisy). Even in Anjou, with its easily worked stone, the vaults are constructed in

this way, the groin voussoirs being first set in position and then any projecting part being cut off [aisles at Cunault (Maine-et-Loire)].

Many groined vaults covering nave and choir have been replaced by ribbed vaults, the position of the pier supports facilitating the change. Those that remain are to be found principally in the Rhineland (St. Die, Laach) and Burgundy (Vézelay), and only exceptionally elsewhere [Chambon-sur-Vousize (Creuse), Ruffec (Indre)]. As a general rule this method of vaulting is limited to the crypt, where it is habitual (St.-Philbert-de-Grandlieu, Auxerre cathedral, Winchester), and to the aisles, where it serves as an efficient abutment to the central vault and allows a thinner wall to be pierced with larger window openings. In the peri-apsidal aisles of churches of the Aix-la-Chapelle type, the vaults, like the bays they cover, are alternately square and triangular on plan, while in many ambulatories their plan is a trapeze, as is the case also in the round church of the Portuguese Convent of Christ at Thomar.

Cross-Ribbed Vaults

Another method of overcoming one of the defects of the groined vault is to construct a permanent centreing of stone under the groin, thus hiding all its irregularities. This device leads to the development of that distinctively Gothic achievement cross-ribbed vaulting, which lies beyond the scope of this volume. We need say but little of it. Although known in Roman times it was not used by Roman builders. It appears in France in the eleventh century [Tribune of St. Ours at Loches (I.-et-L.)] and in the twelfth (Bayeux belfry), also in Lombardy (Plate x,

fig. 1) at Sannazaro-Sezia, and in England (Durham, Gloucester, Canterbury). But in all these instances there is no real understanding of the true purpose and value of the diagonal ribs. They are used mainly to support the groin and keep it regular, and they lack that conductive elasticity that is the true principle of Gothic building. Moreover, in the countries mentioned above, the experiment was after a time abandoned, and it was only later that the builders of the Ile-de-France gave to this system its logical development and spread it abroad into other regions.

The Dome

Roughly speaking, the dome is a hemispherical cap. It is, however, but rarely that the Romanesque dome conforms exactly to this shape; more often it is egg-shaped or octagonal, or even something between the two. The Romans employed the dome, the Pantheon at Rome being the best-known example of their use of it. It has the great advantage of needing no preliminary centreing in its construction, which is one of the reasons why it found favour in the East, where it originated. As we have seen, it was used at an early date to roof round, polygonal and square churches, and then the bays of naves; finally it became the dominant element governing the form of the building, as can be seen in the church of Holy Wisdom at Constantinople. Methods of construction vary. The domes of Armenia and Syria are constructed of heavy materials, as also are those of our Western churches, but the Byzantine domes are of much lighter build, being made of bricks, tiles and sometimes of drain-pipes and amphoræ fitted into one another and forming a spiral from base to

summit, thus producing a structure exerting no lateral thrust (Mausoleum of Galla Placidia). The earlier Romanesque domes are of rubble, the later of shaped blocks laid in regular courses, the voussoirs in each course being joggled to those below and thus kept in place until the whole circle is complete, where its weight keeps it stable.

Domes are often built, not only over circular churches, to which they are naturally adapted, but also over square spaces, such as a bay of the nave, and at once the problem arises of how to effect the change from square to circle. In the earliest Syrian domes, which were of small dimensions, the problem was solved by simply laying slabs across the angles. For domes of greater size this method is unsuitable, and the builders resorted to the squinch and pendentive. The squinch, a device of very early origin, known to the Romans (Hadrian's villa at Tivoli) and the Persians (Sarvistan), was used by the Byzantine architects (St. Vitalis, Ravenna). The Romanesque builders, in their turn, employed it, but as their domes show, their first essays were tentative and experimental [St. Martin at Angers, 1020, and St. Gilderic-de-Lavardin (L.-et-Ch.), 1042]. At Angers columns set in the angles support wall arches, and upon these are laid courses of masonry by which the angles are rounded up to the level of the dome base. The same system, in a more developed form, is used at Le Puy. At Néris the simple method is adopted of laying slabs of stone across the angles, but at St.-Etienne (Nevers, 1080) we find the true squinch, which, though constructed in various ways, has, roughly speaking, the appearance of a semi-dome or split cone supporting a small wall that cuts out the angles of the square.

The dome on squinches, though occasionally round [Lannuéjols (Lozère)], is generally of octagonal form, and is to be found in most districts from the Rhineland to Provence and the south-west. Sometimes the squinches are small and the base of the dome resembles a square with the corners cut off rather than a true octagon (St.-Hilaire at Poitiers).

The pendentive is a concave triangular spandrel constructed of horizontal courses of masonry in the angle of the square to be vaulted. At its lowest point it is bonded into the wall, and the opposite side, which is uppermost, forms a quarter of a circle, each point reaching half-way along the side of the square, so that the upper edges of the four form a complete circle on which the dome may rest. In the tomb of Galla Placidia at Ravenna (about 440), the base of the dome has the same radius as the circle formed by the pendentives, but the result lacks elegance. As a rule the dome is set back from the edge of the pendentives (Solignac) and rises vertically for some distance before the inward curve begins, the result being lighter and more imposing.

The French pendentives differ considerably from the Byzantine in both construction and profile. A vertical section of the latter shows the segment of a circle, while the profile presented by the former is an irregular curve, concave below, convex above. This difference results from the different methods of construction. The French pendentive built in *tas de charge*, with horizontal courses of masonry, needs to be very solid and rigid in its upper parts in order to carry the dome without giving. Another difference is that Byzantine pendentives are built between round-headed arches, French between pointed arches.

The pendentive is, perhaps, of Persian origin. Taken over by the builders of Asia Minor, it ultimately became the most characteristic feature of Byzantine vaulting. It has the advantage of economical construction, without centreing, on horizontal courses of brick and mortar. The dome on pendentives, as employed in Romanesque building, is found in Armenia, but while the Romans were probably acquainted with it, they do not seem to have made much use of it, and it is most probable that the Romanesque builders took the idea from the Byzantines. Though the methods differ, the general form is the same; this the Romanesque architects took and carried it out as best they could.

In France only in one group of churches, about sixty in number, is the pendentive dome used to roof the nave (St.-Etiénne and St. Front at Périgueux, Solignac, etc.) and but rarely the squinched dome (Le Puy cathedral); on the other hand, a single dome over the transept crossing is common throughout the south-west, in Languedoc, Auvergne and Burgundy, and in the Lombardo-Rhenish school. It is found also over porches and belfries when as a rule it rests on squinches, though the pendentive also is used in Languedoc and the south-west. Sometimes the dome rises above a drum that forms a lantern and itself rests upon pendentives [Civray (Vienne)], or squinches (Notre-Dame-des-Doms, Avignon). In the last named church a peculiar method is employed to build the dome above a square, the transition being effected by a series of round-headed arches arranged after the fashion of a stairway. In Auvergne the dome is contained in a great oblong mass of masonry built over the nave, pierced with windows, and abutted on each side by

half-tunnel vaults that cover the parts of the transept arms corresponding with the side aisles.

Occasionally the pendentives have a plane face, instead of being concave, and then the dome is often octagonal; but otherwise it is round. At Loches, however, it is in the form of a pyramid.

Some domes are ribbed, either with ribs radiating simply from the apex (Notre-Dame, Avignon), or forming more complicated patterns. This device is met with in Armenia, at Akphat, where the ribs play the same rôle as Gothic diagonal ribs; we see it again in Arabic mosques (San Christo de la Luz, Toleda), whence it was adopted in Romanesque building (St.-Blaise and Ste.-Croix at Oloron), where the ribs form a star in the central dome, and elsewhere are true Gothic cross-ribs.

The Semi-Dome

This is used to vault a semi-circular or polygonal space, such as an apse. It was employed from very early Christian times to cover the apse, which was almost the only part of the church roofed with stone. In Romanesque building it is used nearly everywhere for apses. Sometimes, especially in Provence, it is ribbed. Where there is an ambulatory it is supported by a row of columns surrounding the choir, and abutted by the ambulatory vaults.

CHAPTER VI

THE EXTERIOR

Romanesque architecture is essentially sincere. The internal arrangement of a church is clearly indicated by the exterior, nor does it seek, as Roman building does, to hide the materials used in construction by facing them with slabs of marble. The rare exceptions to this rule occur naturally in Italy, a country where the old traditions were still strong. Occasionally, however, we meet with a small apse of semi-circular shape within, but disguised exteriorly by being enclosed in a rectangular mass of masonry [Le Thoronet (Var), Senanque (Vaucluse)]. There is generally some special reason for such anomalies; in this case, for example, it may be due to a compromise between the Cistercian tradition of the dominant straight line and the Provençal custom of the semi-circular apse.

As the plan is indicated by the exterior disposition of parts, with the ascending lines of apse and ambulatory, of aisles and transept, the whole crowned, as a rule, by the tower, so also those elements that serve to support the church and maintain its stability, the buttresses and arcading, are not only openly avowed, but also used as ornament and decoration.

The Façade, or West Front

The Romanesque sculptors were not slow to take advantage of the opportunities offered by the façade, and in many cases they have made this the most vivid and the richest part of the whole building.

At the same time the façade gives us another proof of that sincerity of which we have spoken. As a rule it reproduces the divisions of the interior. If the church is aisleless the front wall is undivided. Numerous country churches are of this kind, and so, for example at Mazerolles (Vienne), the front is all of one piece, pierced with a simple doorway and surmounted by an arcaded bell-cote. On the other hand, where there are a nave and two aisles, as at Ouistreham (Calvados), the high middle part of the west front, with its doorway and the window above, is flanked by two lower wings terminating the aisles. The exterior divisions answer exactly in number and height to the interior. At Sant-Abbondio (Como) the five interior divisions are similarly shown on the outside by wall-buttresses and the grading of roof levels.

The main door is often flanked by wall arcading and two other doors; above the central door is at least one window or an *oculus*, and a gable, sometimes decorated with arcading, completes the whole. Again the façade may be flanked by two towers (St.-Etienne, Caen), or may be partly hidden by a porch-tower [Lesterps (Charente)].

In Poitou, Anjou and West Central France, though this rule be generally followed, there are some notable exceptions. Fénioux (Charente-Inf.), which is without aisles, exemplifies the rule, the façade, with a richly decorated doorway, being undivided. But in many aisled churches the height of

the central vault is so little more than that of the aisle vaults that both may be contained under one roof, and the front has therefore but a single gable. Yet even here the internal divisions are outwardly shown both by tall buttresses corresponding with the pier-arcades and by wall arcading answering to the aisles [Parthenay-le-Vieux and St.-Jouin-de-Marnes (Deux-Sèvres), Civray (Vienne), Aulnay (Charente-Inf.)]. Even when the buttresses are omitted (Notre-Dame, Poitiers) the division is still clearly marked. But there are many cases, especially in the Charente, of small aisleless churches having carefully divided fronts [Châtres]. This is probably due to a desire to copy the general appearance of more important aisled buildings. The doorway, which occasionally is the only feature of the façade (Beaulieu), is often accompanied by a decorative wall arcading [St. Paul-de-Varax (Ain)]. Not uncommonly there are three doors, the central one larger than the others [St. Gilles (Gard)], both doors and windows being set off by arcading [Ruffec (Charente), Echillais (Charente-Inf.)]. Three windows set side by side and forming a triplet are common (St.-Etienne, Nevers). Sometimes the whole front, right up to the gable ridges, is decorated with arcading (Ouistreham); in the Pisan school wall galleries replace the arcading (San Paolo, Pisa); in the Lombardo-Rhenish school "Lombardic bands" indefinitely repeated are a favourite ornament [Marmontier (Bas-Rhin)], or wall galleries running up the gable just below the ridge (San Michele, Pavia).

In West Central France the front is sometimes decorated with dressed stones set fanwise or in honeycomb pattern [Villesalem (Vienne)]. Again the decoration may consist of figure sculpture over

the doors and in different parts of the wall [Notre-Dame-la-Grande, Poitiers; St.-Jouin-de-Marnes (Deux-Sèvres)], some Italian fronts being very richly decorated with both arcading and sculpture (San Michele at Pavia).

Doorways

The principal doorway of Romanesque churches is in the centre of the west front. When, by way of exception, it is situated in one of the sides or the transept, this is due to some special reason, as at Clairvaux (Vienne) where the west front overhangs a steep slope in such a way that the floor level at the west end is from twelve to twenty feet above the ground. Sometimes each aisle, as well as the nave, has its own door.

The doorway may be quite simple. At Mazerolles (Vienne) it consists of a round-headed arch of two orders, without a tympanum, carried on two square piers, the whole enclosed in a rectangular frame of masonry flanked by two low buttresses. There is no molding of any sort; but this is, of course, only a poor country church. Still, Sant-Abbondio at Como, a four aisled church, is hardly any richer in ornament, having but two slender columns supporting a molded arch, while at St.-Etienne at Caen the only decoration of the doorways consists of tympana incised with a pattern of stars.

It is, however, more usual for the doorway to be somewhat more richly decorated, with, for example, sculptured arches, and carved capitals crowning attached columns set in the angles of the recessed jambs [St.-George, Boscherville (Seine-Inf.)].

Very commonly the doorway is formed by a series of recessed arches, that is a number of arches each

one of which is set farther back than the one above it, and is, of course, of smaller dimensions than it. The effect is charming, the door, set well back in the wall, being framed and set off by the resulting alternation of light and shade. The topmost arch often projects slightly beyond the level of the wall, forming what is called a hood-mold. The projecting edges between the attached shafts are sometimes left sharp and sometimes rounded [St. Martin-le-Beau (Indre-et-Loire)]. In most cases the arches of the doorway rest upon shafts, but in the Limousin the more logical practice is adopted of resting them upon jambs, while shafts (with capitals but no abacus) set in the angles carry the decorative bowtells.

The jambs are often ornamented, either with foliage [St. Lazare at Avallon (Yonne), Fontgombault (Indre), Charlieu (Loire), Ely (S. door)], or, in Lombardy especially, with figures (San Michele, Pavia and San Zenone, Verona). Where there is a lintel (with typanum) this has its own jambs, two as a rule, but if the lintel is very long a central pillar (*trumeau*) is added for safety's sake. This is often decorated with entwined animals climbing round it, a subject derived, according to M. Mâle, from ancient Syrian manuscripts of the Gospels; well-known examples are at Moissac (T.-et-G.) and at Souillac (Lot), though the latter is now inside the church. At Beaulieu the central jamb bears the figure of Atlas, the two side ones having full-sized figures of two saints.

A similar scheme of decoration is common in the South, e.g. St. Pierre, Maguelonne (Hesault), Morlaas (Basses-Pyr.), Souillac and Moissac, where a curious effect is produced by the tooth-molding on the inner edges of the jambs. In Provence, some-

times, e.g. St. Trophime at Arles (B.-du-R.), St. Gilles (Gard) and Romans (Drôme), large-sized sculptured figures support the frieze and capitals, and a similar arrangement is found at Clermont-Ferrand and even at Vézelay (Yonne). By a further development of the same idea, the columns supporting the arches of the door were replaced by statues. They first appear in Abbot Suger's work at St. Denis (*circa* 1137), whence the practice gradually spread into all other regions, the figures keeping the long, slim proportions of the shafts they had displaced, e.g. Chartres, Vermenton (Yonne), Bourg-Argental (Loire), St. Just-de-Valcabrère (Haute-Garonne) and in Italy at Ferrara, and Spain at Ripoll, Compostela and Avila (San Vicenzo).

In the eleventh century, and usually in the first part of the twelfth, the door arches are round-headed; the pointed arch appears about 1140, mostly in Central France. From about 1160 or 1170 it becomes common and the point becomes more acute. The foiled arch is fairly common, particularly in the south-west, sometimes the upper order alone being of this form [Cruas (Ardèche)], sometimes all the orders [Le Dorat (Haute-Vienne), St. Painant (Vienne), St. Médard at Thouars (Deux-Sèvres)]. Many small churches in Poitou, the Limousin and Charente have the soffit decorated with a simple tooth ornament, e.g. the old church of Journat (Vienne), Châtres (Charente), Petit-Palais (Gironde). This is common in Spain (Toro, the collegiate church, Zamora cathedral), and it seems to have come into France along the pilgrims' road from Compostela.

The multifoiled arch is used throughout the building, in wall-arcading [La Charité-sur-Loire (Nièvre), interior and exterior], in windows [porch at Com-

postela (Spain)], and at Sant-Isidro (Leon) even in the transverse arches of the transept vaults; but the use of the trefoiled arch is more restricted, being employed mainly in cloister arcades, specially in Spain (San Pablo, Barcelona) and in the Rhineland for wall-arcading (Laach).

The soffits, occasionally simply molded, are more often richly decorated: north of the Loire with geometrical designs [Ouistreham, Vienne (Calvados), Gassicourt (Seine-et-Oise)]; in Burgundy and the Midi with leaf scroll and foliage [Moissac (T.-et-G.), Avallon (Yonne)], and in Central France with a number of small human figures set either in the line of the arch (north doorway of Cahors cathedral, central west doorway of Aulnay) or at right angles to it.

As we have seen, the Romanesque doorway is often constructed with a lintel. This takes various forms. In Auvergne it is often of a single block cut into a greatly elongated pentagon, the weight-carrying centre being thus strengthened (Notre-Dame-du-Port). This type is also found elsewhere [Ruffec (Indre), Château-Landon (Seine-et-Marne)]. At Conques (Aveyron) there are two lintels, end to end, with a central supporting pillar. Sometimes, especially north of the Loire, the lintel is replaced by a low segmental arch of dressed stone [Berthaucourt (Somme), Citeaux (Côte-d'Or), Ouistreham, Lichères (Charente)], and at times by two small round-headed arches [Vourant (Vendée), Ydes (Cantal)].

Between the lintel and the soffit of the doorway arches is the tympanum, in the eleventh century and north of the Loire generally left plain or with a simple decoration of geometrical designs. But in the twelfth century, and notably in the Midi and

Burgundy, it is profusely decorated, and these two districts possess a remarkable series of admirably sculptured tympana. On the other hand, doorways without any tympanum are not uncommon, particularly in Auvergne and the north. In the west also the tympanum is exceptional, and the decoration is, therefore, restricted to the soffit.

The triangular pediment above the doorway is rare. There is an example of it at St. Trophime (Arles), and, in fact, it is commoner in Provence, owing to the many Roman buildings still existing, than elsewhere. It is usually supported by columns [Notre-Dame-des-Doms (Avignon), St. Restitut (Drôme), St. Gabriel (B.-du-R.)]. In those districts that have felt the influence of the Norman school, a feature, somewhat similar, but of a different origin, is to be seen, namely a doorway with its head contained within a lofty gable projecting, as a rule, beyond the wall face [Rhuis (Oise), Le Wast (P.-de-C.), Stavanger (Norway)], but at Clonfert (Ireland) kept level with the latter.

The gable of the Romanesque west front is generally saddle-roofed; the rectangular form is rare, except in West Central France [Echillais (Charente-Inf.)]. It is often pierced with an oculus—sometimes enclosed in a cross (St. Gabriel)—or with a small round-headed or cruciform window [St. Guilhem-du-Désert (Hérault)], opening into the roof-chamber; or some sculptured ornament, e.g. the Lamb bearing the Cross [Vernay (Cher)], may replace the opening.

The Nave

This, as a rule, receives but little decoration, the windows and the corbels supporting the cornice

being often the only ornamental features. The buttresses or simple wall-arcading supporting the walls have a somewhat monotonous effect, especially in a nave of any great length, the exterior of Vézelay, for example, even though enriched with the flying buttresses, of later date, by no means suggests the surprising splendour of the interior. There are some exceptions to this rule, such as Orcival (P.-de-D.) with its graceful wall arcades, and Chauriat (P.-de-D.) with its beautiful mosaic of stars in multicoloured stones.

In Italy, though severe simplicity is not unknown (Sant' Abbondio at Como), the abundance of coloured marbles is often used to produce a rich and varied decorative effect (San Giovanni fuori, Pistoia), while the Pisan school is fond of a multiplicity of arcades and galleries (San Michele, Lucca).

The Transept

This is often left quite unadorned with nothing but its windows and doorways (Paray-le-Monial), or some buttresses or wall-arcading [St.-Benoit-sur-Loire (Loiret)] to break its monotony. In Auvergne, however, there are many exceptions to this, and we find, in addition to the wall-arcading, a glowing mosaic of coloured stone set in a framework of billet molding. From another point of view also the typical Auvergne transept is remarkable. For as we have seen, the dome above the crossing is abutted, above the level of the nave vaulting, by a system of half-tunnel vaults covering the first bay of the transept arm. These vaults are enclosed in an oblong mass of masonry from which springs the central tower, the whole disposition with its ascending scale of parts having a peculiarly happy effect.

The transept arm occasionally is round-ended like an apse (Ruremonde and Tournay); in the Lombardo-Rhenish school it is sometimes decorated with wall-galleries [Lünd (Sweden)], which occasionally follow the rising line of the gable roof (Tournay).

It is quite common for the transept arm to have no doorway at all; when there is one it is usually of a very plain design, sometimes at the end, sometimes on one side, and often placed unsymmetrically. For the transept to possess a monumental doorway as at Vouvant (Vendée) is quite exceptional and due to some special reason, such as the lie of the ground or the vicinity of some important building.

The Apse

The apse contains the sanctuary and altar, and therefore is treated with special care and attention. Occasionally a church constructed on simple lines may have the apse left unadorned, but this is exceptional. Many methods are employed in the decoration of the apse, sculptured corbels, a high, small and continuous wall-arcading [Verdun (Ariège)], three or five larger wall arches along the side wall [Plassac (Charente)], occasionally with the central arch multifoiled [Rosiers d'Egletous (Correze)], some Lombard bands [Cruas (Ardèche), Murbach (Haute-Rhin)], or simply some buttresses to break the monotony of the plain wall. Or again an inlay of variously coloured stone is used (Notre-Dame-de-la-Sède at Tarbes), or the wall is ornamented with *opus reticulatum* [Rivière (Indre-et-Loire)] or some other pattern.

The windows also, occasionally simple, are more generally decorated with hood-molds and embrasure shafts. Often also wall-arcading is carried right

round the apse beneath the windows (Boscherville), sometimes in two or more lines (San-Tirso at Sahagun), and again, in Italy and the Anglo-Norman school a favourite form of wall-decoration is the intersecting arcading as seen at Santo-Spirito (Palermo) and Ste.-Marguerite (Seine-Inf.). In this way an effect of great richness is imparted to the apse even of a small church. Some notable examples are to be seen in West Central France, as at Rioux and Rétaux. Here the apse wall is divided by column-buttresses into a series of panels, the window opening of each having elegant shafts upholding the richly decorated soffit; beneath the windows the wall is ornamented with zigzags and fish-scales, and above, a very graceful arcading is surmounted by a frieze, while carved corbel heads support the cornice.

When the plan of a church is more elaborate the apse with its corona of radiating chapels produces of itself a charming effect of harmonious lines without the need of additional ornament [Souillac (Lot)]. But the Romanesque builders were not content with this; they loved to decorate even these already beautiful apses in the same way as the simpler ones; and so we find wall-arcading around the choir, above the ambulatory [Preuilly, Le Charité-sur-Loire (Nièvre)] and round the radiating chapels [St. Pierre-de-Chauvigny (Vienne)], sculptured buttresses and jambs [St.-Jouin-de-Marnes (Deux-Sèvres)], and grouped shafts and columns used as abutments (Vouvant, St. Hilaire at Poitiers) that produce a most charming effect and remind one irresistibly of the apses of Syria, such as Qualb-Louzeh.

We need do no more than mention the use of variously coloured stones (Auvergne), the graceful wall galleries of which we have already spoken

(Plate x, fig. 2), and finally the sculptured friezes, especially just below the cornice, that are so common a feature of apsidal decoration in the south-west and south of the Loire [Selles-sur-Cher (Loir-et-Cher), Dax (Landes), St. Hilaire (Poitiers)].

CHAPTER VII

ATRIUM, NARTHEX, PORCH. TOWERS AND BELFRIES. FORTIFIED CHURCHES

I. Atrium, Narthex, Porch

The complete atrium, such as that of Maria-Laach, or the larger one at Sant' Ambrogio, Milan, is rare in Romanesque churches.

In the medieval town, crowded inside its fortified walls, there was no room for this adjunct of the ancient basilica, and all that is left of it is the porch or the narthex. This has its liturgical uses, as for example on Palm Sunday, when part of the procession leaves the church and the clergy carry out a portion of the service just outside the door. It serves the practical purpose also of offering shelter from the weather without necessitating entry into the church. The atrium or porch is sometimes called the parvise (paradise). In front of it the bishop, or other ecclesiastical judge, held his court sitting upon the porch steps, and, in the Midi and Lombardy, between the stone lions flanking the entrance; hence the phrase *inter leones* handed down by tradition, but with no documentary evidence in its favour, at least in France. But few parvises remain, and they are Gothic work; they also are

adorned with lions at the entrance (Ste-Radegonde, Poiters), which often carry escutcheons. Though the two terms, narthex and porch, are often used indiscriminately, it is better to keep the former for those greater vestibules that consist of two or more bays and are generally enclosed, and to apply the latter only to those smaller constructions giving on to the door and, as a rule, more or less open towards the exterior. So, e.g. at Cluny, entry to the narthex was through a porch.

The primitive Romanesque porch was a simple penthouse roof of wood supported by wooden posts, sheltering the doorway at the front or side of the church. Naturally such perishable constructions have disappeared, and all that is left of them are the corbels on which the inner edge of the penthouse rested [Maillé (Vendée)]. There still remain many porches constructed with stone piers or columns, or even a row of arches, supporting a timbered or vaulted roof. They may stand simply before a door [St. Saviol (Vienne)], or run the whole width of the front [Avon (Indre-et-Loire)], or even be carried round to the sides of the building [Oyré (Vienne), Serrabona (Pyr.-Or.)]. Some are of great size, especially in Spain; that of San-Miguel-de-Escalada, with its fine horseshoe arcade, and those of San-Martin and Sant-Estaban at Segovia almost wholly surround the churches. Often the porch is formed by a chamber enclosed between two towers, as at La Trinité at Caen and Paray-le-Monial (Saône-et-Loire) —a type already encountered in Syria—or it may be the lower storey of the belfry itself [St.-Benoit-sur-Loire (Loiret), Lesterps (Charente)]. In Lombardy a common form is a sort of canopy, with a triangular pediment, supported by columns which generally

rest upon lions or griffins (S. Zeno, Verona), an arrangement copied in Dauphiné [Embrun cathedral (Hautes-Alpes)].

The narthex of Vézelay (Yonne) is one of the most remarkable examples still in existence. It comprises three bays, with side-aisles and tribunes. The narthex on such a scale as this was confined to greater churches, particularly in Burgundy, that of Cluny (*circa* 1220) having five bays. It served as a chapel, and sometimes, as at Vézelay, possessed a second storey serving the same purpose. Some, as at Ely and Granville (S.-Inf.) contained apsidal recesses for altars.

Here it may be noted that chapels occupying an elevated situation, whether in tribunes or towers, were usually dedicated to St. Michael, in memory of the famous pilgrimage churches of Monte Gargano and Mont St. Michel. In the plan of St. Gall the belfry chapels have this dedication.

II. Towers and Belfries

The simplest form of belfry is the bell-cote, which consists in what may be called an upward extension of the gable pierced with one or more openings wherein the bells are hung (Plate VI, fig. 1). Many of these simple constructions are of great beauty [Courbiac (L.-et-G.), Mazerolles (Vienne), Mézières (I.-et-L.)].

Another form found more or less everywhere, though not so often, is the porch-belfry, hiding part of the west front [Créteil (Seine), Saverne (Bas-Rhin), St. Benoît-sur-Loire (Loiret), Lesterps, Bury St. Edmunds], or standing on one side of the church

[St. Léonard (Haute-Vienne)]. A common position for the belfry is directly above the first bay of the nave, or if the church has two western towers they stand at or towards the north and south ends of the front, as at St.-Etienne at Caen and Marmoutier (Bas-Rhin). In Western France we often find these western towers taking the shape of an elegant campanile with a conical cap, rising from a group of buttresses at the north-west and south-west angles of the church (Notre-Dame at Poitiers and St.-Jouin-de-Marnes).

The Romanesque church can hardly be said to be complete without its belfry, or in the case of a small building, its bell-cote, which is often the only decorative feature it possesses. Where stone or brick was too costly, wood was used. The bell-cote, easy and cheap to build, and admirably adapted for poor churches, is found everywhere, but particularly in West Central and South-West France, from the Loire to the Pyrenees. Though most commonly built above the western gable, it may occupy other positions, e.g. over the eastern gable [La Batie-Neuve (Hautes-Alpes)], at one side, or occasionally over the arch separating sanctuary from nave [Per (Cantal)]. It has, as a rule, a platform behind, to allow easier inspection and maintenance of the bells.

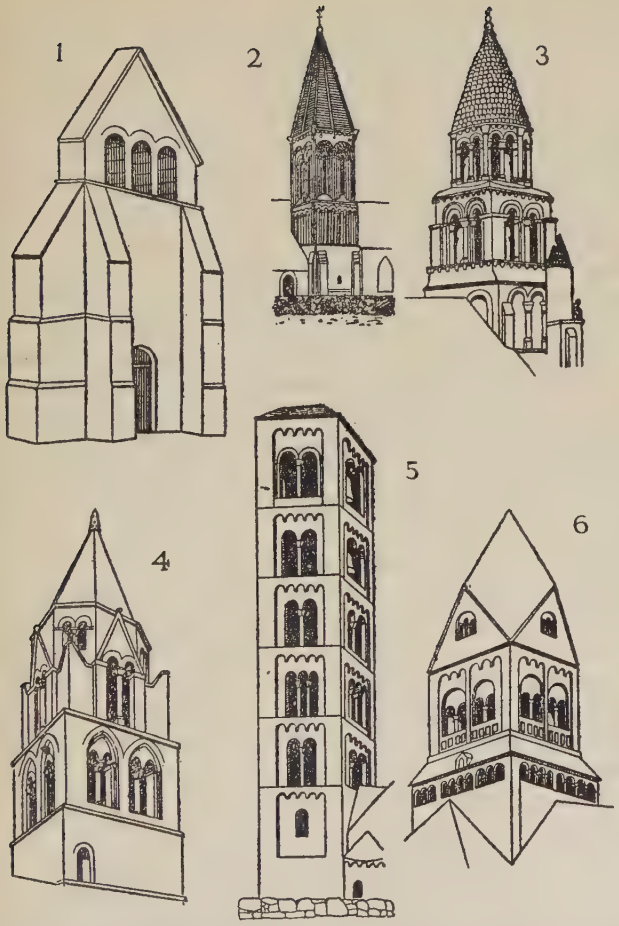
There are two dominant forms of bell-cote, the one finished off with a horizontal ridge, the other with a saddle-back. It is seldom possible to date these simple constructions, which, in fact, have been built at all periods down to our own days.

But not all are of such extreme simplicity; the ridge is sometimes crenellated [Baseous (Gers)]; there may be three pedimented openings containing three bells (La Soule), or two separate bell-cotes

side by side [Magnat l'Etrange (Creuse)], or, more rarely, as at Le Puy, one on each side of the main gable. A good example of the straight-ridged bell-cote is that at La Rue St. Pierre (Oise) with two bells. As examples of the triangular type we may note that at Luz, with one opening and stepped sides, and the severely simple one on the Baptistery of St. John at Poitiers pierced for two bells at the same level. Sometimes the bell-cote has two sets of bell-openings at different levels [Ydes (Cantal), Ourjout (Ariège)]; again it may be decorated with graceful pinnacles, as at Cubord (Vienne), where the two arcades, with decorative shafts, are surmounted by a light triangular gable flanked by two cones with scale ornament after the fashion of the belfries of Poitou. Long after the Romanesque period was ended these various types of bell-cotes were frequently erected, especially in the south.

The Romanesque belfry and tower may either rise from the body of the church or directly from the ground. In the former case the most usual positions are the transept crossing and the westernmost bay of the nave, though they are also situated in other places; so, for example, at Cluny there was a tower at the middle of each transept arm, one of which still stands.

The central tower is supported by the four piers at the crossing, which have, perforce, to be strengthened by being built thicker than the others, with the result that the nave is often considerably narrowed at this point and the view of the altar restricted [Trois-Palis (Charente)]. This defect is often to be seen in churches which, though remodelled, have preserved, in part, their original lay-out [Civaux (Vienne)].



1. Bell-cote La Roche-prés-Feyt. 2. Norman tower, St. Loup, Bayeux. 3. Pomegranate cap. Notre-Dame-la-Grande, Poitiers. 4. Uzerche (Corrèze). 5. Lombard type, S. Climent, Tahull, Catalonia. 6. Rhenish type, Maria-Laach.

The tower, especially when placed centrally, is often pierced with window openings, thus becoming a lantern tower. St. Gregory of Tours witnesses to the existence of this feature in some of the basilicas of his time, and the plan of St. Riquier (Lemme) shows that church with a lantern over each transept. To be found everywhere, the lantern tower is common in Normandy, England, the Rhineland and Italy [St.-Etienne (Caen), Jumièges, Le Puy, Durham]. The early lantern tower was not vaulted, at least north of the Loire, a wooden floor dividing the bell chamber from the lantern. In Gothic times this was often replaced by a ribbed vault, e.g. St. George, Boscherville. Elsewhere the upper part of the tower is often covered with a domed vault [Notre-Dame-des-Doms (Avignon), Le Puy, Ancona (Italy)]. Often the tower is built in several storeys and surmounted by a spire [Le Dorat (Haute-Vienne)].

The central tower is generally, but not by any means always, square (Boscherville). At the Church of the Apostles, Cologne, and the cathedral of Trent it is octagonal; in the latter case the lower storey is square, the transition from this to the octagon being masked by turrets at the four corners. Where there is no central tower the transept crossing is often covered by a dome [Orcival (P.-de-D.), Paray-le-Monial (S.-et-L.), Cellefrouin (Charente)], which is but rarely lighted (Lusignan).

Even when the upper stages of the tower are octagonal or round, the lower are generally square [occasionally oblong, as at Salers (Cantal)], various constructional devices, such as squinches, being employed to effect the transition. It is exceptional to find a Romanesque tower built on a circular or

octagonal plan from its base. Some well-known examples are the leaning tower at Pisa, the Fenestrelle at Uzès (Gard) and the belfry at Santa Coloma (Andorra).

This does not apply to angle towers, that is towers of small dimension containing a spiral stairway giving access to the roof or bells, and nearly always set at one of the angles of the building, for example (Trier cathedral) at the extremity of the west front, or in the transept angle, or at a corner of the tower [St. Pierre de Chauvigny (Vienne), Boscherville]. In the west these towers often end in stumpy conical spires, sometimes covered with scale ornament. At Notre-Dame-la-Grande (Poitiers) one of these towers is built in the south wall of the nave, another stands at the south-east angle, giving access to the roof and belfry. The spire of the second has the scale ornament, the first being plain.

Where there is a western tower, its ground floor often serves as a porch, and this may then be enclosed by walls, with doors opening towards the exterior and towards the nave, though in many cases the four piers are connected by arches, or sometimes a series of piers and columns upholding the vault divides the porch space into bays, as at Lesterps (Charente), an arrangement employed to give extra strength when the tower is lofty (Le Puy). In other cases the ground floor of the tower is used as a chapel or baptistery and has communication with the interior only. The first storey is often used as a chapel, generally dedicated to St. Michael, or serves to house relics and the church treasure.

The tower is often vaulted with a dome on squinches, while the lower vault may be of the groined variety [Orgeval (Seine-et-Oise)], or

tunnelled (St. Porchaire at Poitiers), or even of a rudimentary ribbed type [Cormery (Indre-et-Loire), Bayeux (Calvados)]. At St. Hilaire at Poitiers and elsewhere, the ribs are a later addition to the original groined vault. Sometimes a circular opening—*the bell hole*—is left in the vault, to allow the bells to be hoisted into position.

Externally the different stages of the tower are indicated by cornices and recessing, by windows and arcading. Each storey is generally lofty and often contains two rows of windows (first storey of Le Puy belfry). Many keep the same form and approximately the same dimensions from base to summit [St.-Etienne at Caen, Puissalicon (Hérault), Cluny, St. André at Bagé-le-Châtel (Ain), Carbini (Corsica), Pomposo (Emilia)], but often a greater measure of stability is attained by recessing each successive storey [Bassac (Charente), le Dorat (Haute-Vienne)].

When, as often happens, advantage is taken of this to change the plan of a tower, to pass from square to octagonal or round, various methods of effecting the transition are adopted. A very successful device is that employed on some towers in the Limousin, e.g. Uzerche and Collonges (Plate VI, fig. 4). Dormer windows, with acutely pointed gables, are pierced in each side of the uppermost square storey, the gable point being carried right up to the top of the first octagonal storey. Another common device is to place small turrets or pinnacles at the four corners of the square, when the passage to the octagonal plan is made.

The Romanesque tower is completed in a great variety of ways. Some are flat-topped, especially in Southern France, and occasionally the summits of these are crenellated [Cuna (Pyr.-Or.), Ripoll (Cata-

lonia), Lucca (Italy)]. In Normandy and the north a common way of finishing off the square tower is to carry up two opposite sides to points and then construct a simple saddle roof. The Rhineland school developed another form of tower roofing, known as rhomboidal, which is seen to perfection at Maria-Laach (Plate VI, fig. 6) and also at Coblenz (St. Castor's) and St. Bartholomew's at Liège. Each of the four walls is built to a gable point, and from these points the ridges of the four-sided spire converge to the apex.

The four-sided or pyramidal spire rising directly from the four sides of the square tower is very common, and though as a rule this form of spire is rather stumpy, it is occasionally, especially in Normandy, very slender and graceful, e.g. St. Loup at Bayeux. (Plate VI, fig. 2.)

But the octagonal spire found more favour with Romanesque builders. When it springs from a square tower it is generally supported on squinches, and, of course, at each corner of the square there is a space cut off by one of the sides of the octagon. This space is generally occupied by a small pyramid which helps to counteract the side thrust of the spire [St. Vaast-de-Longmont (Oise), Gübwiller (Haut-Rhin), Bassac (Charente)].

Sometimes in these corners we find graceful spirelets, as at Notre-Dame at Étampes, where the spire, lightened by the window openings at its base, and the four spirelets, with their supporting columns and shafts, form a charming composition. When the transition from square to octagon takes place below the beginning of the spire, or below the level of the roof (Bagé-le-Châtel, le Dorat) there is naturally no place for these pyramids and spirelets.

At Bonn cathedral, at Spa and Rampillon (Seine-et-Oise) and elsewhere, each side of an octagonal tower is carried to a point, and from these rise the ridges of the eight-sided spire.

In West Central France a preference is shown for the conical spire, which has generally a slight bulge [Notre-Dame, Poitiers (Plate VI, fig. 3), Saintes (Charente)] and only rarely becomes as sharply pointed as that at Fenioux (Deux-Sevres), though from the first half of the twelfth century the tendency is towards greater slenderness in every type of spire.

In outward appearance the Romanesque belfry varies from the unadorned sternness of St. Pons (Hérault)—pierced with but a few narrow loop-holes —to the richly ornamented La Charité-sur-Loire (Nièvre) with its intricate arcadings and moldings, its cinquefoiled windows and sculptured corbels.

Most of them have windows, and very often these increase in number and size as we rise higher, a device successful artistically and sound constructionally, giving weight and solidity below and lightness above (Lucca).

As with the church roof so with the spire, every sort of material is used to cover it, stone, wood, slate, tiles, lead, copper. And every device is employed in its decoration, scale ornament, horizontal, straight and wavy lines of colour, and the peculiar arrangement proper to Poitou, where the scales are so set as to produce an effect strongly resembling a pine-cone. (Plate VI, fig. 3.)

And on the topmost point stands the weathercock, a feature of great antiquity, though the only examples known to date from Romanesque times are those of Savouges (Côte-d'Or) and Charnalières (H.-L.).

III. Fortified Churches

The towers, and especially the porch-towers of Romanesque churches, often resemble in appearance and arrangement the keep of feudal castles of contemporary date. They present the same difficulty of access to the upper storeys, and the same arrangement of one great hall on each floor with no openings in the walls but narrow slits. The necessity of taking strict precautions to guard the relics of saints and precious reliquaries and other valuable objects against possible theft is often quite sufficient to account for these features, without supposing, as is often done, that they have any military objective. It is true that, in the eleventh century, there is documentary evidence of the fortification of churches, particularly in the Midi, but it would seem that these were later additions, not included in the original plans, and that, in many cases, they were the work of layfolk putting the church to uses foreign to its purpose. The *Constitutions relative to Peace and Truce* drawn up by the Councils of Toulouges (Pyr.-Or.) and St. Gilles (Gard) in the middle of the century make mention of fortifications in churches, and add that these were the resort of brigands, who no doubt often strengthened the defensive features inherent in every Romanesque church.

Abuses of this kind became so common that the Council of the Lateran (1123) and nearly a century later that of Avignon (1209) thought it necessary to forbid laymen to fortify churches; sufficient evidence that some churches, at least, were being provided with these forbidden accessories; possibly those at Agde (Hérault) and Les Stes Maries de la Mer are

among the offenders aimed at by the latter Council. Many churches, however, were built within fortified places, such as towns and castles, and were therefore liable to become the scenes of war-like episodes, such as that enacted at Bruges in the ancient church of St. Donatian in 1127. Count Charles the Good having been assassinated by Bouchard in one of the tribunes, the murderers fortified themselves in the church, then in the belfry, and successfully resisted attack until King Louis VI began to sap the base of the tower. This move brought about their unconditional surrender, and the least of the punishments meted out to them was that of being thrown headlong from the summit of the tower.

There is nothing to show that this church was fortified; yet by making use of its architectural features, which were common to almost every church of the time, these men were able to hold out for nearly a month.

Du Cange quotes a twelfth century document showing how public opinion was outraged when a church was fortified "*sacrilege et prophanissime.*" Canon law forbade the fortification of all religious buildings except for the purpose of resisting attack by the infidel; hence it is in the Midi, so easily open to Saracen invasion, that most of the examples are to be found. There, then, we have churches which, at the end of the twelfth century, were provided with those means of defence which were common in Palestinian churches, such as those at Safita and Chastel Blanc. This latter is, in effect, the ground floor of a rectangular keep. It consists of a tunnel-vaulted nave and an apse covered with a semi-dome. Inside there is a well; there is an upper hall and the platform above is battlemented. This sort of build-

ing was hitherto unknown in France, and it is clear that at Agde (1173), Régleilles (Pyr.-Or.), Montmajour (B.-du-R.), and Maguelonne (Hérault) the fortifications are later additions and not part of the original plans. The chapel of Cruas (Ardèche) is the French type of the fortress-church, but it is exceptional in the west in the Romanesque period.

Monasteries were often surrounded with a simple wooden palisade, and some were wholly built of wood. A certain number had other defences, but in any case these would be of no avail except to ward off a sudden raid, and we have to wait until the end of the twelfth century before we meet with any really serious defensive works, such as those at Maguelonne. Occasionally, however, as at Lerins, a stone keep was built where the monks could take refuge.

In the thirteenth, fourteenth and fifteenth centuries great changes took place, and during the Hundred Years' War many Romanesque churches were fortified, while others were wholly rebuilt with a view to defence against attack.

CHAPTER VIII

THE COLUMN AND ITS COMPONENTS. THE CORBEL-TABLE

The Column

In Romanesque buildings the capital is the connecting link between the column and those parts that the column supports. The transition from the capital to the shaft of the column is marked by the astragal, a slightly projecting necking, generally molded. In the older Classical column, turned on a lathe and slightly bulging, the necking was worked on the shaft, but to do this with the cylindrical Romanesque column would have meant a waste of material and an offence against the principles of economy then in vogue. It became, therefore, a part of the capital.

Above the necking is the bell, the main element in the capital, often decorated with painting or carving, and above this is the abacus, a flat slab usually slightly larger than the bell, which supports the springers or lower courses of the arches.

Finally, the bottom of the shaft rests upon a base, and this stands upon a plinth; stability is thus assured.

The Capital

As the top of the column is smaller than the abacus, the bell of the capital must increase in size from the bottom upwards. Logically, also, it must

pass from a circular form, where it rests upon the column, to a square or oblong shape, where it supports the abacus. This transition is effected either by cutting its surfaces or by some method of decoration, such as volutes or crockets, supporting the angles of the abacus. In the twelfth century this becomes the favourite method.

The general form of the bell is but rarely oblong. This type is employed to receive the springers of arches that support thick walls, notably in many Lombard towers, e.g. Sant Abbondio at Rignagno Flaminio (Italy), also at Axiat (Ariège) and Puissalicon (Hérault). At St. Martin-du-Canigou (Pyr.-Or.) may be seen some of the curious so-called Catalan capitals of trapezoidal form, which in reality are a development of the abacus carried so far as to absorb altogether the bell and neck. In the cloisters at Moissac (T.-et-G.) the arches rest alternately on single columns and pairs of columns. The capitals of the latter are square, and to balance them those of the former are oblong. Occasionally we find a capital so planned, at least in its upper part, as to correspond with the outline of the springers resting upon it, and with an abacus of the same plan [St. Sever (Landes), cubical capitals in Peterborough cathedral]. Again, while some are circular, others are square from the astragal upwards; these latter are set upon square pilasters and are not uncommon in the Burgundian school. In the apse at Jazeneuil (Vienne) the bases of the capitals are cut away to fit the pilasters.

In the matter of height there is endless variety from the elongated to the squat, those of the twelfth century being, as a rule, the most harmoniously proportioned. It would be impossible to give a

complete list of the numberless forms assumed by Romanesque capitals; a brief account of the commoner types must suffice.

A very simple form is the inverted and truncated pyramid, often completed at the corner by volutes or heads supporting the angles of the abacus. This type is well adapted to take various sorts of ornament, such as interlacings, basket-work (St. Bertrand-de-Commings)—a motif common in Byzantine work—foliage and other designs. A very few Romanesque capitals are simply molded [Notre-Dame-du-Port, narthex; Echillais (Char.-Inf.) façade].

A very common type in Lombardy, Normandy and the Rhine valley is the cubical, cushion, capital, taken by Northern Italy from Roman building. M. Lasteyric describes it roughly as "a spherical block cut by two horizontal planes at the neck and abacus, and by four vertical planes corresponding to the four edges of the abacus." On plan, therefore, it is square or oblong. We find it in Sant Abbondio at Como, begun in 1013 (Plate x, fig. 4), and St. Michael's at Hildesheim, finished in 1033. Though heavy in appearance, it is easy to cut; hence passing from Lombardy into Catalonia and again into the Rhineland, it found great favour, and was, indeed, preferred to all other forms. It was adopted also by the Anglo-Norman builders. To relieve its monotony and give lightness it was subdivided (Rosheim); by multiplying and lengthening these subdivisions the scalloped capital was evolved, and this form of decoration applied, as it is in Normandy, to the great circular capitals of such churches as Bernières or Ouistreham (Calvados) produces a sort of tiled effect characteristic of this school. All kinds of ornament were applied to these capitals.

They were carved with figure subjects, foliage, interlacings, basket-work, incised geometrical designs, stars and so forth; quite commonly they were also painted, and when their surfaces were plain, were decorated with frescoes.

The Corinthian capital, almost universal in later Roman building, was also employed by Romanesque builders, but at first in a very simple and even crude form. They long continued to take great liberties with their model, but in the twelfth century we find some examples worthy to be compared, for grace and delicacy, with the works of antiquity. The Romanesque masons produced much most beautiful work in their foliated capitals which give evidence both of skill in craftsmanship and of a rich imagination. They used not only the acanthus and the palmette (St. Gaudens) and the large waterleaf [Le Mans cathedral, Saulieu (Côte-d'Or), St. Sever (Landes)], but an infinite variety of conventional foliage, fruits and buds, arranged in every possible way, springing from the astragal or the abacus, twining itself about the bell in scrolls, and following a tradition springing from the East, with figures of real and fabulous persons and animals, sirens and centaurs, perched among the branches.

Figured capitals, though of smaller decorative value, are often, as in the case of the admirable series at Vézelay, of great interest. The subjects include fantastic animals from the medieval bestiaries or Eastern textiles, lions, griffins, birds, etc., Scriptural scenes, e.g. Adam after his sin at Isle-Bouchard (Indre-et-Loire), and episodes taken from other books, e.g. the combat of Virtues and Vices from the Psychomachia of Prudentius (Notre-Dame-du-Port, Clermont).

Sometimes a whole range of capitals is sculptured with an ordered sequence of Scriptural or other scenes; many cloisters and doorways show examples of this practice (St. Aubin at Angers); occasionally the sequence is continued as a frieze along the wall, as on the front of Echebrune (Charente-Inf.).

From the point of view of dating, the eleventh century capital is often of somewhat poor proportions; it is occasionally divided horizontally by its ornamentation into two or three stages, the lowest forming a kind of narrow collar (Tour des clercs at Rouen cathedral).

Archaic and unskilful sculpture is not necessarily a proof of antiquity. All types of capitals are found in the eleventh century, but the figured variety is but seldom met with north of the Loire (St. Germain-des-Prés), where the sculptor's art was less advanced than in the south, and had a long time to wait before producing much beyond flat geometrical designs.

The Astragal or Neck

The object of this is to mark the transition from the column to the capital and to soften the contrast between the two. In Classical times it was part of the column, and was underlined with a fillet or an incised groove just below it. In the Carolingian period its position was indeterminate; sometimes it formed part of the column, sometimes of the capital, but in Romanesque building it is always attached to the latter, except in some rare cases (St. Michel d'Aiguilhe at Le Puy) where the influence of antique work is apparent. Very occasionally, as in the cloister at Epfig (Bas-Rhin) and elsewhere in the Rhineland, it is lacking altogether.

In the eleventh century the astragal generally consists of a wide molding that is often flat and rectangular in section [Remiremont crypt (Vosges), Retheuil (Aisne)]; other forms sometimes used are the cable [Tournus narthex (Saône-et-Loire)], billet and nail ornament. In the twelfth century it is usually more regular in outline, not so thick, and of better proportions with the capital, but it is still decorated with various forms of ornament, the cable [Lesterps (Charente)], which is sometimes doubled, basket-work (St. Sernin at Toulouse), pearls, foliage, leaf-scroll, egg-molding. Finally, in Burgundy, under the influence of Classical models, we find an astragal of a more complicated form with a small roll and hollow [Châtel-Censoir, eleventh century; Vézelay (Yonne)].

The Abacus

" This is a slab surmounting the capital, enlarging its spread, and giving it a greater surface for the reception of the load pressing upon the column " (Viollet-le-Duc). Whereas the Classical and the Gothic abacus is slight, needing no relief beyond some simple molding, the Romanesque abacus cries out for decoration to disguise its heaviness. In Byzantine building the abacus, borrowed from the East, is a sort of second capital of more or less the same height as the main one on which it rests. The Carolingian builders carried on this practice with modifications; but in Romanesque the clumsy Carolingian cushion is much reduced and becomes a real abacus resting directly upon the capital. In some cases, however, the abacus still retained so much of its former size that it was thought advisable to omit the capital itself, a custom so common in

Catalonia—St. Martin of Canigou offers some fine examples—that this form of abacus is often called the Catalan capital.

The springers of the arch being generally rectangular, the abacus naturally follows the same plan, though in the twelfth century this rule is not always followed. We meet with the polygonal form and with the recessed abacus that corresponds faithfully in plan with the contour of the different orders of the arches reposing on it.

In the eleventh century the commonest profile of the abacus is formed by a champfer and fillet (Caen, Trinité and St.-Etienne), but the champfer is often replaced by a hollow (Lesterps), which, to give an effect of greater lightness, is sometimes divided into several hollows [St. Leu at Esserent (Oise)]. It is also often decorated with the various sorts of ornament then in vogue.

The twelfth century saw the abacus diminish greatly in thickness and lose the last of the Carolingian heaviness. Slender columns, such as those set in doorways and window embrasures, generally lack the abacus. As regards the profile, all forms occur everywhere, yet certain regions show a preference for particular types; thus the champfer and fillet is most common in the Ile-de-France, the Centre, the Gironde and Western Brittany; Poitou and the Charente favour the fillet and hollow, while the fillet and roll is almost restricted to the Ile-de-France and England. The usual ornaments—tooth, nail, billet, chequers, foliage, animals—are found in all districts.

The Base

Romanesque bases are derived from two types of

Roman base, the one consisting of a hollow between two rolls, the other of a glacis or slope. The former type gave rise to the many varieties of molded base, by far the most numerous in Romanesque building. They may be divided into three main classes, namely a hollow between two large rolls, a single large roll, and a series of unequal rolls or of moldings of more or less regularity.

These three classes are all found in the eleventh century, though there is a tendency for the hollow to disappear. St. Michel d'Aiguilhe at le Puy shows some well-known examples of it. The single roll [St. Amand (Cher)] is rare, most bases being of the many rolled type, whether the molded rolls be of equal diameter [St. Généroux (Deux-Sèvres), Notre-Dame-de-la-Couture (Le Mans)], or of unequal size. In some cases the lowest molding is of but very shallow projection, pointing the way to the flattening that came in the next century. Another variety sometimes found is simply an inverted copy of the cubical capital.

In the twelfth century the single roll or bowtell becomes much more common, but, while the other types are also found, the dominant form is that derived directly from the hollow between two rolls. Of this again there are three principal varieties: (*a*) The two bowtells are divided by a hollow which, in cross section, is the segment of a single continuous curve. The two rolls may be of equal diameter and projection, or the lower may be the larger. (*b*) The hollow is formed by the meeting of two curves of unequal diameters, the smaller being uppermost so that the lower roll has a greater salience than the upper. (*c*) The lower bowtell is flattened (common in the twelfth century).

The base with a glacis or slope, frequent in the eleventh century, is but rarely found in the twelfth. The slope is either simple or composed of a series of smaller ones separated by fillets. The lower part often ends in a large band, or in the twelfth century in a bowtell (St. Hilaire at Poitiers, the ambulatory).

The decoration of the base, already in vogue, was developed in the eleventh century, and became very common and rich in the following. All the usual forms of ornament are met with: twists, interlacings, foliage, entwined animals [Airvault (Deux-Sèvres)], and occasionally human figures.

The Romanesque base is sometimes square, and occasionally, while square below, it passes gradually to a circular form in the uppermost moldings.

The square block upon which the base generally stands is sometimes decorated, especially in the Lombard school and its connections, with sculptured supporting figures of Atlas, lions, griffins, elephants (Bari). These supporters are also found below the columns of doorways and porches, even at times without any intermediate molded base [Verona, Embrun (Hautes-Alpes), Fontgombault (Indre)].

The angles of the bases are often decorated with small sculptured ornaments known as spurs. Hardly known before the eleventh century, they are common and of great variety in the twelfth, comprising foliage, heads, pomegranates, small animals, and at Airvault (Deux-Sèvres) small mushrooms.

The various forms of base are met with more or less everywhere, so that occasionally in the one building, e.g. St. Benoit-sur-Loire (Loiret), almost all of them may be seen. In the Rhineland, however, Auvergne and the Foix district, the molded base is almost exclusively used, while the glacis form

is commonest in Berry and the Anglo-Norman school. From the point of view of date, the hollow between two rolls is rare in the eleventh century, but dominant in the twelfth. Much the same may be said of the base with a single bowtell, but the best criterion of date is the fineness or otherwise of the work rather than the type employed.

The Cornice, or Corbel-table

The cornice, resting upon the uppermost course of a wall, helps to preserve it against the weather, is the connecting link with the roof, and by its projection serves as a drip-course. It is often found also on the top of the façade, on gable-walls and, as ornament, over doorways [Gassicourt (Seine-et-Oise)]. The complete corbel-table comprises three elements: the plate, an intermediate part, often an arcading, supporting this, and the modillions or corbels upholding the whole; but one or the other may be absent, more generally the second.

The function of the plate is to catch and throw off rain from the wall, and it is shaped with that end in view. Its simplest form, a fillet above a champfer or a hollow, is dominant in Poitou, Velay and the Lot valley; in Burgundy and the Limousin the profile is often a quarter-circle and a torus molding. The cornice is often ornamented with all sorts of decorative motives, especially in the Soissonnais [Chivy belfry, eleventh century; Berzy-le-Sec (Aisne)]; and not uncommonly its edge, between the corbels, is cut into a curve, with some quaint figure occupying the centre—a form frequent in Berry.

In the Ile-de-France in the eleventh century, and in Normandy in the twelfth, the crenellated cornice

is common. Sometimes a series of small arches is inserted above the corbels, a system in use from the eleventh century right through the Romanesque period [Secquaville-en-Bessin (Calvados), Nouailleé (Vienne)].

Plate IX, fig. 5 shows a type of cornice found in the Beauvais country in the twelfth century, with two smaller arches contained within each of the main ones, while fig. 4 shows another type, with straight-sided arches, found in Laon.

The corbel is often decorated with heads of animals, fabled monsters and all sorts of figures.

The one illustrated in Plate VIII, fig. 3 is very common and well known. The French call it *à copeaux* (shavings) because it is supposed to resemble a beam-end roughly fashioned with a chisel. Common in Auvergne, Poitou and Berry, it is found at the end of the tenth century in the mosque at Cordova, now the cathedral. There it occurs alongside a characteristic ornament, a kind of incised star, which is to be seen also beneath some corbel tables in Auvergne (Notre-Dame-du-Port at Clermont Ferrand).

Finally, note the twelfth century Burgundian form shown in Plate VII, fig. 7 with the connected trapezoidal corbels [Vermenton, Ste-Marie-du-Bourg at Avallon (Yonne)].

PART III

CHRONOLOGICAL AND TOPOGRAPHICAL DIVISIONS

ELEVENTH CENTURY CHURCHES. THE VARIOUS SCHOOLS OF ROMANESQUE

CHAPTER I

THE EARLIEST ROMANESQUE CHURCHES TO THE TWELFTH CENTURY

While the last of the Carolingian churches were being built others were beginning to appear in which is evident a new architectural spirit. They show an inclination to get away from the old basilican methods of construction and decoration, and a desire to seek rather for simplicity of line and solidity. Naturally the new method did not grow to perfection all at once. Experiments had to be made in various directions. Hence we find sometimes a mingling of the old and the new ideas in one and the same building; in one the old small and regular Carolingian masonry, in another some specifically Carolingian feature in the plan, e.g. the double transept at St. Vorle de Chatillon-sur-Seine (Côte-d'Or). But taking a general view, it is clear that a new movement has arisen, and that new influences have begun to affect the old Latin traditions, which the Merovingians and Carolingians had already modified.

As we have seen, the movement did not originate wholly in the West. Certain types of building and methods of construction were brought back by pilgrims from the East which had, during many centuries, been the home of many flourishing Christian communities; from Persia the Arabs had carried many ideas into Spain, though it is not

always possible to follow every step of the road they had travelled. Then again, the development of monasticism and of the cultus of the saints, the fixation of the liturgy and its growing tendency towards standardization, had their effect upon the evolution of certain parts of the church, the choir in particular.

But these and other influences, though apparently identical throughout Western Europe, did not act equally everywhere; or rather local ideas and circumstances reacted to them differently in different places. Just as, in earlier times, the Christian builders of Syria and Asia Minor often went by different roads in order to reach the same end and meet the same needs, so it was now. From the first the Romanesque architects displayed a remarkable originality. As early as the eleventh century it is possible to discern profound differences between the buildings in various regions, but, owing to the incompleteness of evidence, both documentary and architectural, it is impossible as yet to give a full and coherent account of the birth and growth of the new architecture in the first half of that century. In the second half certain distinct schools were already definitely established. In the following century it becomes easy to follow the course of development everywhere, but in our study of primitive Romanesque we can do no more than take a general view, with an occasional side-glance at some specially localized points of detail.

We must note, however, that one strongly characterized type of church is already found over a wide area, from the Adriatic to Burgundy and to Southern Catalonia, throughout Northern Italy, Switzerland, the Jura, Provence and Languedoc.

These churches are of plain and severe appearance; in plan they are of the basilican type with a nave and two side aisles each ending in a semi-circular apse. The piers of the arcade are thick and clumsy, and the only decoration consists in "Lombard bands," or some niches round the apse and some tooth ornament. The building material is rag, i.e. flat slabs of undressed stone used in a manner reminiscent of earlier brickwork. These churches, which are practically identical throughout this wide territory, are roofed either with timber or with stone vaults, which latter are in Catalonia more highly developed than elsewhere: e.g. San Martino, Ciria (Lombardy), San Vicenzo, Estamaria (Catalonia) and St. Martin, Aime (Savoy). It would seem that this kind of building, probably of Italian origin, is the bridge between Carolingian architecture and true Romanesque.

Attention must be called also to the great difference between the building art of the beginning of the eleventh century and that of the end. The earlier period is a time of experiment, the work is clumsy and without polish. But before the century is over the road has been opened out, the architect is master of his art and has conceived and carried out vast designs. Cluny, the masterpiece of Romanesque and the greatest of all Christian monuments until the building of the present St. Peter's at Rome, was begun in 1089, and St. Sernin at Toulouse dates from the end of the same century. Such works were bound to exert a great influence, and they played a great part in the formation of the various schools. The special study of those buildings which illustrate the formation of Romanesque art is of comparatively recent growth. Formerly the differ-

ences between them and the twelfth century churches were not clearly seen, and, through lack of careful investigation, it was thought that but very few fragments remained of buildings erected before the end of the eleventh century. To M. Lefèvre-Pontalis, head of the Ecole des Chartres, falls the honour of having led the way in the scientific study of eleventh century buildings.

Masonry

The churches of the eleventh century[1] are often constructed of small blocks of stone, either squared and used with a decorative effect (e.g. *opus reticulatum* in the apse of Ronceray at Angers, herring-bone divided by courses of flints around Beauvais), or unworked rubble set in thick mortar from which project the sharp edges of the stone. The use of brick is rare.

Larger blocks of stone are, however, sometimes employed, and even in certain districts, e.g. the Soissonnais, to the total exclusion of the smaller. Much depends upon the local geological conditions.

[1] A short list of those surviving:

France (dates according to M. Deshoulières): Montié-render, 990 (Haute-Marne); S. Germain-des-Prés, 1005; St.-Martin-du-Canigou, 1005 (Pyr.-Or.); Tournus, 1012, 1070 (S.-et-L.); Le Ronceray d'Angers, 1025, 1095 (M.-et-L.); Jumièges, 1045 (S.-Inf.), Ottmarsheim, 1046 (H.-Rhin); Vignory, 1045 (Haute-Marne); S. Savinien, Sens, 1070 (Yonne); St. Etienne, Nevers (Nièvre); Ste. Radegonde, Poitiers, 1090 (Vienne).

Italy: S. Clemente, Rome; S. Miniato, Florence; S. Abbondio, Como, begun 1013; S. Vincenzo, Galliono di Canta; S. Martino, Ciria; S. Carpoforo, Como.

Catalonia: Sant Pere, Burgal; S. Vicens, Estamerin; S. Maria, Amer; S. Cecilia, Montserrat; S. Margarita de la Tossa, Montbuy; S. Pere, Sen d'Urgel; S. Vicens, Cardona.

Occasionally, moreover, different kinds of materials are used for different parts of the same building; for example at St. Michel-de-Cuna (Pyr.-Or.), begun in 1040, there is clear documentary evidence that the foundations were of common rubble, while the walls are of dressed blocks. As a general rule, however, early Romanesque masonry is rough, the stones are irregular, with small pieces often pushed into the thick mortar joints. Here and there the chisel has left its marks, often herring-bone fashion, upon the worked blocks, but there is no sign of the axe.

The Plan

In the planning of the eleventh century church there is no sudden break with the past, but rather a gradual modification. Though the aisleless nave is rare in all districts, there are some well-known examples of it: St. Gilderic at Lavardin (1042), St. Hilaire (1045) and St. Radegonde (1090) at Poitiers, Sant-Martin-les-Corts, consecrated 1068, and Sant-Pons at Corbera.

Much commoner is the nave with two aisles, e.g. St. Germain-des-Prés (1005) and Jumièges (1045), and in those districts where the Lombard influence has been felt, there are a large number of small churches of this type, with nave arcades of columns or, more commonly, piers, and three apses, the central one being the largest; e.g. La Clusa (Catalonia), San Giovanni-dei-Campi at Piobesi Torinese (Italy) and St. Martin at Aime (Savoy).

Whereas Vignory and a few other churches are exceptional in having no transept, a few instances of the old Carolingian plan with two transepts are also found [St. Vorle at Châtillon (Côte-d'Or) 1045]. The transept arms are often provided with one or

more minor apses; at Ripoll in the time of Abbot Oliva there were six, while at St. Ouen at Rouen the Tour aux Clercs is simply one of the apses of the eleventh century church, which had two in each arm of the transept. A side opening gave communication between the two, and the one still standing had a chamber above its vault, giving on to a gallery, an arrangement confined to Normandy.

Every type of choir is found. The apse is generally semi-circular, rarely polygonal. The ambulatory was already known in the Carolingian period, e.g. Clermont, Orleans, Tours. The feature was copied in Auvergne and the West, and in the eleventh century was widely adopted, being met with in places so far apart as Jumièges and Tournus. The so-called Benedictine choir is not unknown, while in Catalonia there are several churches with circular choirs with a series of niches hollowed out in the wall, e.g. San Vicenzo at Cardona (1040) and Sant-Martin-les-Corts (1068). This type appears also at a later period in the Rhineland.

There are a few examples of the double-apsed church, e.g. Sant-Pere at Burgal, an occasional trefoiled apse (Sant-Marti at Brull in Catalonia), and a few round churches, e.g. Ottmarsheim and Charraux (Vienne). Finally mention must be made of the crypt, often a very important feature in the eleventh century (Auxerre, St. Martin-du-Canigou) the plan of which is usually the same as that of the main building.

Interior Elevation

Except in the finer churches built at the end of the century, e.g. St. Etienne at Nevers, the supports lack elegance and are of rough construction, often

of small rubble (Tournus). Often again there is neither impost nor base [St. Leger-au-Bois (Oise)]. Sometimes columns and piers are used alternately (Jumièges). The piers, generally massive, may be square (Montiérender, St. Leger-aux-Bois), round (Tournus, Sant Abbondio at Como), or cruciform (the ancient cathedral of Chartres, San Carpoforo at Como, 1040). Occasionally the piers have flanking columns (Mont St. Michel, 1040, St. Martial at Limoges 1025, now destroyed, crypt of Auxerre 1030). At St. Remi (Rheims) the faces of the piers are divided into small columns to lessen their heavy appearance.

Pier Arcades

The arches are always semi-circular, except in Catalonia, where, under Mozarabic influence, the horseshoe arch, elsewhere altogether exceptional [Bernay (Eure) 1020], is not uncommon. As a rule the arch is constructed with narrow voussoirs, often rectangular, in which case the mortar joint is necessarily thicker towards the extrados. At St. Martin-du-Canigou, and occasionally elsewhere, the voussoirs are of untrimmed flat rubble with great quantities of mortar. Sometimes a second arch is imposed upon the first (St. Savinien, Sens), not always projecting to form a second order as at Mont St. Michel.

Only the edges of the arches are of worked stone, the central parts visible in the intrados being of rough rabble. It is but rarely that they are molded (Bernay, 1020).

Tribunes

The tribune never wholly disappeared. It is common from the beginning of Romanesque,

e.g. Montiérender, 990. On the other hand the triforium is exceptional (Bernay).

Windows

Many of the basilicas with roofs of timber were well lighted with large windows high in the walls. This is true also of the vaulted St. Martial at Limoges; but this is exceptional. As a rule windows in the eleventh century are small and the interiors of churches are dark. This is especially so in the south, e.g. St. Martin-du-Canigou was lighted by one oculus in the west front. The narrow slits, even though splayed both without and within, of such churches as Sant-Martin-les-Corts, or Sant Jaume at Frontinya, could have provided but a most indifferent light. Not all the early windows are splayed. As a rule they lack any sort of ornament, but towards the middle of the century we sometimes find them flanked by small decorative columns.

Vaults

The vaulting of the nave began at a very early date in Catalonia, e.g. Santa Maria d'Amer in 945, Sta Cecilia at Montserrat in 957, and by 977 the great church of Ripoll was vaulted throughout. These vaults are of the tunnel variety, and no special precautions were taken against the risk of collapse. In St. Martin-du-Canigou, 1025, a transverse arch is thrown across the nave, a device that soon became common (Mur, Catalonia). The tunnel vaults of the aisles serve as buttresses for that of the nave; occasionally, as at Palau Sabardera (Catalonia), half-tunnel vaults are employed. The groined vault appears at Santa Maria (Anau), and the dome over the crossing at Sant Vicens (Cardona) in 1041. In

this church tunnel vaults cover nave and transepts, and groined vaults the aisles and porch. But elsewhere vaults are not met with before 1040. Until then the Romanesque basilicas were roofed with timber, as many continued to be until the twelfth century.

The earliest known vaulted churches in France are St. Gilderic-de-Lavardin, 1042, and Lesterps (Charente), 1055. Until the end of the century vaulted naves are rare, but vaults over the aisles are commoner, e.g. Tournus, 960, and Jumièges, 1045 (groined), Lesterps (tunnel). The crypt, likewise, is frequently vaulted (Auxerre, 1030, groined).

Transverse arches are common; their presence or absence gives no clue to the date.

Transepts

In the eleventh century, as formerly, there is no rule as to transepts. If there is one, the crossing is sometimes vaulted, not seldom with a dome, either on a corbel-table [St. Gilderic-de-Lavardin, Néris (Allier)], or on squinches (St. Etienne at Nevers). The lantern tower is also met with, as at Beaulieu-les-Loches (Indre-et-Loire).

The transept arms, some of which are of great size, are sometimes vaulted (Angers cathedral, groined, St. Etienne at Nevers, tunnel), and small apsidal chapels open towards the east.

The Choir

At Ripoll and elsewhere the choir is a simple semi-circular apse, but as a rule it is of a somewhat greater length (Poitiers, St. Hilaire). Not uncommonly it is the only part of the church to be vaulted, usually with a semi-dome.

The square-ended choir is rare; Ottmarsheim has one copied from the chapel at Aix. A few, e.g. Ste. Radegonde, Poitiers, are polygonal.

The ambulatory is vaulted, groined vaults being the more usual type.

Externally the typical eleventh century church showed an assemblage of great compact masses of rather rough masonry, but little relieved with ornament.

Towers

These are generally square and flank the west front, though occasionally, as at St. Hilaire, Poitiers, the old tradition of the isolated tower is followed. Jumièges and the two great abbey churches at Caen are examples of the west front with two flanking towers. Here and there, e.g. Tournus, a porch or narthex is set between them.

Decoration

This is usually simple and severe. Decorative devices such as *opus reticulatum*, and herring-bone masonry are sometimes employed, with wall arcading and, in some places, e.g. Como, Tournus and Catalonia, "Lombard bands."

Ornament is poor in quality and of but little variety in design; geometrical motives are common, with interlacings, spirals, and billets (windows of Ste. Radegonde, Poitiers). Incised designs are much used. Where the acanthus leaf is attempted the work is rough and with little elegance or proportion. The end of the century, however, saw a true revival of the sculptor's art, originating in the south.

The capitals are, as a rule, more richly ornamented

than other parts of the building, though they are often very badly proportioned, being either too squat or too slender. Frequently the bell is divided by successive rings of foliage (la Couture at Le Mans), or has large volutes at the corners. Incised designs on the four sides are common [Oulchy-le-Chateau (Aisne)]. Cubical capitals are common in the Lombard school and the Rhineland. Towards the end of the century much better work is done, some of the capitals at Cluny being very fine.

But in very many churches the piers have no capitals, but merely an impost. Where the abacus is anything more than a simple slab its edge is generally champfered, or occasionally hollowed.

The neck, with few exceptions, forms part of the capital, and, unless it has some cable molding, is usually a wide roll of small projection.

The bases are of many forms, either with molded rolls (St. Etienne at Nevers) or with the glacis (Auxerre crypt).

CHAPTER II

THE VARIOUS SCHOOLS OF ROMANESQUE. PROVENCE. BURGUNDY

The task of introducing some kind of order into the classification of the monuments of Romanesque architecture has, since the earliest days of archæological studies, proved complicated and difficult. The necessary principles are by no means easy to fix. Though Romanesque, wherever practised, has the same origin and therefore many points of identity, it yet offers an extraordinary variety of types. What makes classification so difficult is the constant action and reaction of reciprocal influences. Hence whatever divisions and groupings are admitted it is impossible to find perfect homogeneity in any of them.

However, some sort of classification is both desirable and possible, provided that we do not insist upon too definite a local limit to the extension of a particular school.

We may begin by establishing two main divisions which became apparent at a very early date, and bear upon one of the essential features of a church, to wit the vault. In the districts north of the Loire, in Normandy, Northern France, the valley of the Rhine and north and east of this river, the Romanesque builders were very late in building vaults over

the nave, and some never did so; though in England ribbed vaults made a very early appearance. But south of the Loire most churches were vaulted before the end of the eleventh century. The same is true of Burgundy, Auvergne and all the west and south of France. Catalonia was specially precocious in this respect. In Lombardy, also, the ribbed vault was known in the eleventh century, but neither it nor any other sort of vault was extensively employed.

When we come to a more detailed classification we find that many different opinions have been held. Towards 1840 Caumont distinguished seven schools of Romanesque architecture, namely those of Northern France, of Normandy and Brittany, Poitou, Anjou and Touraine, Aquitaine, Auvergne, and Burgundy and the Germanic border. Although the scientific study of the buildings had hardly begun, and Caumont relied almost wholly upon their outward features, his classification showed remarkable clear-sightedness. Quicherat, taking the vault as his criterion, distinguished nine schools, but he left out of account the many unvaulted churches.

Viollet-le-Duc had no fixed theory, at one time distinguishing seven schools, at another as many as thirteen; but he did not clearly discriminate between Romanesque and Gothic. Anthyme - Saint - Paul, using arbitrary standards, discovered fifteen schools; Choisy reduced these to seven, including a Benedictine school but neglecting, as many had done before him, that of Lombardy. According to Lasteyrie, who relied upon the vault and certain essential constructional features, there are eight main schools, but Lefèvre-Pontalis was able to show that one of these, that of the domed churches of Aquitaine, was simply a branch of the Western.

MM. Enlart, Brutails and Bréhier, following the wide and deep researches of Lefèvre-Pontalis, have cleared up many points of detail.

In the following pages we follow the classification given by M. Marcel Aubert in the bibliography attached to his edition of de Lasteyrie's great work on Romanesque Architecture in France. According to this there are eight schools of French Romanesque. Finally we shall point out certain features proper to some other countries.

Provence[1]

General features

Nave with two aisles, but aiseless nave common; simple apse, semi-circular or polygonal; transept fairly common; interior low, rather dark, sometimes lighted from one side only; recessed piers; wide nave arcades; pointed tunnel vaults common, ribbed domes and semi-domes; aisles with half-tunnel vaults not buttressing the nave; pedimented doorways with composite tympanum; square belfries; decoration and sculpture reminiscent of the Classical.

The geographical boundaries of this school are: the Rhone to the west, with Valence as the northern limit; the Alps to the east, where it merges sometimes into the school of Lombardy, and the Mediterranean to the south. Its centres are the episcopal cities of Aix and Arles. It arose rather late in the eleventh

[1] Among the principal buildings of this school are: *Drome*: St.-Paul-Trois-Chateaux; Die cathedral; St. Restitut. *Vaucluse*: Notre-Dame-des-Doms, Avignon; Le Thor; Cavaillon. *Bouches-du-Rhône*: Les Stes. Maries-de-la-Mer; St. Trophime, Arles; Montmajour. *Gard*: St. Gilles. *Ardèche*: Bourg-St.-Andéol.

century. Owing to certain superficial characters it has sometimes been confounded with the Burgundian school, but its vaulting system points rather to Catalonian influence coming by way of the Mediterranean littoral.

Masonry

Provence abounds in splendid monuments of antiquity, also in building stone of good quality and beautiful appearance. It is not therefore surprising that the Romanesque builders were skilled masons and, following the examples before their eyes, built with carefully-dressed blocks of stone, and were sparing in their use of mortar.

Plan

The aisleless church is common. The transept is usual but not universal. The east end is a semi-circular or polygonal apse. This is the plan of St. Restitut, St. Gabriel, and the cathedral at Die. Digne cathedral, with its square east end, is exceptional. Where there are aisles these also have semi-circular apsidal ends, e.g. St.-Paul-Trois-Chateaux.

Interior

This is very characteristic. The nave is low. Along the walls are wide recessed wall-arcadings with molded soffits (Notre-Dame-des-Doms, St. Restitut), which serve as discharging arches to support the vault, and below which the windows are pierced. The vault is often of the pointed tunnel variety.

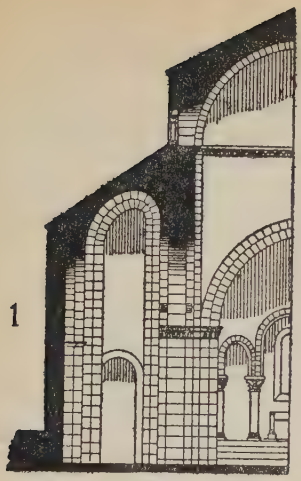
In this country of brilliant sun and violent *mistral* the windows are few and small. In St. Restitut, which should have three apse windows,

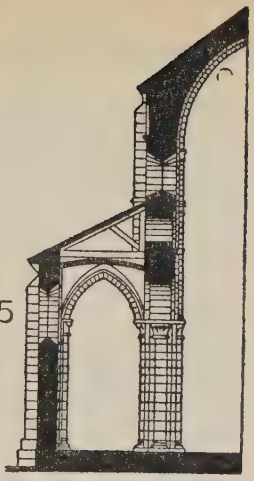
only the central and south windows have been pierced, while the nave is lighted only by an oculus above the triumphal arch and one window in the south wall. The apse at Solérieux (Drôme) is quite windowless.

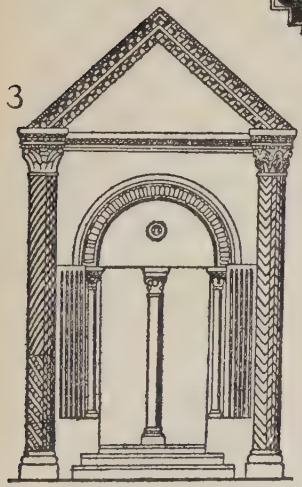
The bay preceding the choir and forming the transept is often loftier than the others, and covered with a ribbed dome on squinches, e.g. the Barbara chapel at Allan (Drôme), Cavaillon and Notre-Dame-des-Doms. In this last church the bay, which is oblong, passes into the super-imposed square by means of a series of arches resting upon corbels, and beneath the dome the drum serves as a lantern. The semidome over the apse is usually ribbed [St. Quinin, Vaison (Vaucluse), Montmajour etc.]. The apse is often decorated with wall arcading on small columns, and sometimes above this runs a narrow frieze (St. Restitut; St. Jean-du-Moutier, Arles).

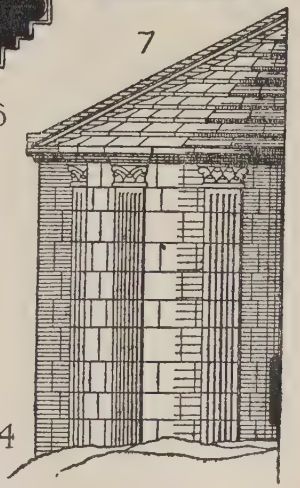
Where there are side aisles they are generally narrow. The transept has an apsidal chapel in each arm (St. Trophime, Arles, in its original state), but where, as is often the case, it does not project beyond the main walls, these minor apses terminate the aisles [La Garde-Adhémar (Drôme)]. The piers are composite and, upon simple imposts, receive the two orders of the main arches, the transverse and the wall arches. The nave arches are semi-circular, of two orders, with plain square edges. Tribunes are unknown. The windows, sometimes only in the south wall (Bourg-St.-Andéol), are small and widely splayed. Sometimes a wall arcade encloses them, sometimes they are flanked by small pilasters (St.-Paul-Trois-Chateaux).

The nave is covered with a tunnel vault either









School of Provence

1. Vaison Cathedral (Section). 2. Vaison Cathedral (Pier).
3. Le Thor (Door). 4. Arles. Apse of S. Jean-du-Moutier.

Burgundy School

5. Paray-le-Monial. 6. Cluny (Pier). 7. Burgundian Cornice.

round or pointed, with transverse arches (La Garde-Adhémar), and generally is rather low (St. Trophime is an exception). The aisles are covered with tunnel or half-tunnel vaults, which do not serve as abutment to the high vaults, and the transept crossing is domed.

Exterior

The west front is severe. It has some windows with plain soffits in the upper part and an oculus in the centre of the gable. The doorway is the most characteristic feature. It is flanked by two columns supporting a semi-circular arch with the soffit ornamented with some archaic design. The tympanum is but rarely decorated (St. Gabriel) and is sometimes supported by a central column (Le Thor, Plate VII, fig. 3); the whole is enclosed by two large attached half-columns (often fluted, Notre-Dame-des-Doms) supporting a triangular pediment, the whole ornamented with Classical designs.

A few monumental façades (St. Gilles, St. Trophime, St. Barnard at Romans) carry a very rich decoration. Doorways with sculptured tympana and lintels, carved friezes resting upon columns which are themselves supported by sculptured animal and other figures, jambs enriched with statues and bas-reliefs, produce a sumptuous *ensemble* which owes much to Roman influence and tradition. The side walls are severe. Small columns with capitals (Le Thor) may set off the windows; the apse is often strengthened by fluted pilasters (Plate VII, fig. 4) carrying wall arcading. Lombard bands are used as ornament. The square belfry (occasionally octagonal, Bourg-St.-Andéol) is pierced with plain window openings.

Little ornamentation is used; much of it is reminiscent of the Classical. The capitals in the choir are of the Corinthian type and often well carved.

Burgundian School[1]

General Characteristics

As a rule, nave, aisles and transept; some ambulatories and Benedictine choirs, large narthex, fluted pilasters, arches and tunnel vaults often pointed, false triforium, naves lofty, with or without clerestory, vaults groined or tunnel with transverse arches, aisles vaulted but seldom as abutment to high vaults, elevation of choir same as that of nave, exterior rather severe, fine doorways with tympana, Burgundian cornices.

The foremost characteristic of the Burgundian builders was boldness. They aimed at raising great buildings that should be both solidly vaulted and well lighted. Receptive of influences coming from many quarters, they experimented with all sorts of plans and processes. Already in the eleventh century such fine and at the same time such different achievements as the churches of Tournus, St. Benigne (Dijon) and Cluny stand as evidence of their genius and skill, but it is only towards 1200 that the character of the school becomes definitely fixed.

[1] Principal buildings. *Yonne*: Vézelay; *Saône-et-Loire*: Cluny; Autun cathedral; Paray-le-Monial; Tournus. *Côte-d'Or*: Fontenay; Notre Dame, Beaune. *Loire*: Charlieu. *Allier*: Autry-Issards; Bourbon-l'Archambault; Yzeure. *Nièvre*: La Charité-sur-Loire. *Haute-Marne*: Langres cathedral. *Rhône*: St. Martin, Ainay.

The development of this character, and the spread of its influence throughout Christendom, are mainly due to the great monasteries and monastic orders, of Cluny in the first place, and Citeaux in a less degree. In fact the history of Romanesque art in Burgundy is so closely bound up with that of the Cluniac monasteries, that Mâle sums it up in the phrase, "Burgundy is Cluny."

Yet, at the same time, various groups or families in this school are to be distinguished. Closely linked with Cluny are such churches as Paray-le-Monial (Plate VII, fig. 5), which is a small-scale copy of it, and Notre Dame de Beaune. In these we find the three-storeyed arrangement of nave arcade, false triforium and large windows below a tunnel vault. Vézelay and several other churches, mainly in the diocese of Autun, reacting possibly against the domination of Cluny, departed in various ways from this formula, notably by the adoption of groined vaults.

In the earlier years the architecture of Lombardy contributed to the formation of the school, as is clear from Tournus (Saône-et-Loire) and St. Vorle, Chatillon-sur-Seine (Côte-d'Or). The great churches bordering the Loire also left their mark, especially by introducing the ambulatory and the immense transept such as we see at Tournus and Cluny. Certain details and methods which we find, for example, at St. Etienne, Nevers, are borrowed from Auvergne, and finally the fluted pilasters common in South Burgundy betray the influence of Provence. By the twelfth century Burgundian Romanesque has acquired its unity and proclaims its true originality.

The geographical limits of this school, according to Lefèvre-Pontalis, are Sens, Joigny and Auxerre

to the north, Langres, Epinal and Besançon to the east, Lyons to the south with extensions towards Geneva and Vienne, and Nevers and the Bourbonnais to the west.

Masonry

The Burgundian builders found splendid allies in their audacity in the hard and durable limestones of Auxerre and Tonnerre. Yet many of their buildings have had to be strengthened by chains and flying buttresses (Vézelay). Their sculptors were well served by the yellowish and fine grained limestone of the Brionnais. Elsewhere granite and sandstone were available.

The first of these materials, carefully cut and dressed, produce magnificent work. In less favoured districts equal care is shown in the use of smaller material. At Tournus, round piers built up in just the same way as the walls have a peculiar appearance, while at St. Etienne, Nevers, as elsewhere in the district, the great columns separating the ambulatory from the choir, are monoliths. In some places (St. Martin d'Ainay, Lyons) decorative and polychrome masonry, similar to that in Auvergne, is found.

Plan

The smaller churches are often aisleless, with a semi-circular eastern end [Autry-Issards (Allier)]. More usual, however, is the church planned with nave and two aisles, as a rule not very wide, with a transept of slight projection, and a semi-circular apse, flanked by two minor apses opening out of the transept arms (St. Philibert, Dijon). Some examples of the Benedictine choir exist [Anzy-le-Duc (Saône et-Loire)], while some of the greater churches have an ambulatory with three or five radiating chapels

(Paray-le-Monial). Cluny had two transepts. This plan may be completed by a large narthex and two western towers (Tournus and Paray-le-Monial). At Cluny the narthex, now destroyed, covered five bays; that at Vézelay, with a gallery giving on to the nave, comprises three.

Interior

The Burgundian builders use many varieties of piers. At Tournus they are round, at Châlon-sur-Saone square with flanking columns, at St. Philibert, Dijon, they are cruciform. The attached half columns so often employed, frequently give place, especially in the larger churches, to the fluted pilaster, which may be attached to all four sides as at Langres, or confined to that facing the nave (Beaune). Sometimes the pilasters which take the transverse arches, instead of being carried right down to the ground, are cut off at the impost (Chatillon-sur-Seine, Autry-Issards).

The nave arcade arches, often pointed (Semur-en-Brionnais) are of two orders, very seldom molded. Above there is a blind arcade or false triforium, either of the Romanesque type (Semur), or of Classic design with small fluted pilasters (Beaune, Langres cathedral). Here and there are ventilation holes opening into the aisle roof chamber. This storey, however, is not found in many of the smaller churches and even in a few of the greater [Avallon, St. Lazare (Yonne), Thil-Chatel (Côte-d'Or)].

While in many small churches [Bard-le-Régulier (Côte-d'Or)] there are no windows in the nave, in some they encroach considerably upon the vault [Bussy-le-Grand (Côte-d'Or)]. At Avallon oculi are pierced very high in the wall.

The nave vault is a tunnel, usually pointed, with transverse arches. The aisles always have groined vaults of rubble, with pointed transverse arches, often acting, in the smaller churches, as an abutment to the nave vault. But in the greater churches the high vaults have no abutment at all, and, with the nave windows an added source of weakness, have often collapsed. At Vézelay and St. Philibert (Dijon) the nave has a groined vault resting on wall arches, with a transverse arch at each bay. Tournus nave has a series of tunnel vaults set at right angles to the axis; but when these transverse vaults are used they are generally employed to serve another purpose. Either the arches supporting them are so arranged along the walls as to form a line of chapels, or else their piers are pierced so as to constitute a side aisle; in both cases the high vault over the nave is adequately abutted. The Cistercian church of Fontenay is the best known example of this type (Plate IV, fig. 3).

The transept crossing has an octagonal dome on squinches, and the arms are tunnel vaulted.

In monastic churches the choir is long, elsewhere, besides the semi-domed apse, it comprises at most one bay. Sometimes, as at Beaune, it reproduces the elevation of the nave. In the ambulatory we often find fluted pilasters upholding the transverse arches of the vault [St. Menoux (Allier)]. At Paray-le-Monial there is a double range of windows between the radiating chapels, and a single window over the entrance to each chapel.

Exterior

The exterior of the Burgundian churches is, as a rule, somewhat severe. The doorways, with

delicately sculptured columns, lintels, tympana and hoods, are often veritable masterpieces, e.g. Charlieu, Avallon, Autun, Vézelay, but otherwise the west front carries but little decoration. At Anzy-le-Duc there is one simple window above a richly carved doorway, at Fontenay two ranges of windows; at Beaune a square tower rises above the entrance, at Paray-le-Monial two towers enclose it; at St.-Paul-de-Varax (Aix) the sole ornament is some arcading and a carved frieze.

Vézelay is a good illustration of the rather monotonous aspect of the sides, but the apse, with its column-buttresses or its fluted pilasters (St. Menoux), offers a little more variety.

Sculptured corbel-tables with figured corbels, as at Anzy-le-Duc, are rare. Much more common is the monotonous Burgundian cornice (Plate VII, fig. 7) with its long lines of identically shaped modillions.

Towers

These are more ornate. Generally there is only one, which is usually central, though sometimes it is over the west front (Beaune), and occasionally, as at Perrecy-les-Forges (S.-et-L.), its ground floor forms the porch. At Paray-le-Monial there are two western towers, a very rare feature.

As a rule the tower is square, but in a few cases octagonal (Anzy-le-Duc). From the middle of the twelfth century, openings, single, pairs, or even triplets (Anzy-le-Duc) are pierced, enclosed in wall arcading. Spires are rare [Meillers (Allier)], but domes roofed with stone slabs are common. As ornament for the upper parts, wall arcading (Beaune) and Lombard bands (Chapaize, Cluny) are employed.

Attached turrets with spiral staircases give place to outside stairways as a means to access to the central towers.

Decoration

The work on the sculptured capitals and tympana, excellent in style and powerful in execution, is of the highest order. The jambs of doorways, their columns and soffits are covered with beautiful designs; foliage, scroll work, small human figures mingle together with grace and harmony. Classical influence is marked; some of the motives are copied directly from the Roman monuments at Autun.

CHAPTER III

AUVERGNE. LANGUEDOC. SPAIN AND PORTUGAL. THE LATIN EAST. THE SOUTH-WEST.

Auvergne

Characteristics

Multi-coloured and patterned masonry. *Small churches*: basilican plan common, no tribunes, nave vault tunnel, abutted by half-tunnel vaults of side-aisles. *Greater churches*: basilican plan, transepts of two bays, ambulatories, tribunes. Arches of nave arcade of one order, from which, without any recessing, spring the groined vaults of the aisles. This vaulting, in square compartments, rests upon a prolongation of the abacus. The high vaults are abutted by the tribune half-tunnel vaults. No clerestory. Transept crossing marked off by four pierced gabled walls. Central octagonal tower rising from an oblong mass of masonry that encloses the dome and the vaults of the first bay of the transept, by which the dome is abutted. In both types of church, large porch, doorway with triangular lintel.

The geographical extension of this school is but small. Clermont-Ferrand is its centre, and the church of Notre-Dame-du-Port seems to have been the main source of its inspiration. Though, in certain matters of detail, its influence has been

felt far afield, typical churches of this school are to be found only in the Puy-de-Dôme and in a few places in the neighbouring Cantal and Allier and very occasionally in the upper Loire. Two types of church belong to the school, one of the basilican plan with tribunes, depending upon Notre-Dame-du-Port, the other of variously planned buildings without tribunes.[1]

Masonry

There is a tendency to regard the churches of Auvergne as all built of local volcanic rocks; in fact, by grouping with them those of le Velay—undoubtedly an architectural incongruity—some writers came to speak of the *Volcanic school* of Romanesque. As a matter of fact, although the upper parts of the churches of Auvergne are often constructed of light scoriæ set with thick mortar joints to produce the so-called honeycomb pattern, and volcanic rocks of many colours were used for decorative purposes, the lower parts that have to carry a heavy load were, right down to the thirteenth century, built of arkosis, a glacial sandstone of a granular texture somewhat like granite. The Volvic quarries of lava were not exploited for building purposes until the thirteenth century; hence the Romanesque portions of the church of Volvic itself are built of sandstone.

Hence we find all load-bearing parts, including the supports and buttresses, constructed of medium-

[1] First type: Besse-en-Chandesse, Glaine-Montaigut, St. Dier, Volvic, Ris, St. Martin-de-Cournon, St. Genès at Thiers, Allanche, Lanobre, Biozat. Second Type: Notre-Dame-du-Port at Clermont-Ferrand, Orcival, St. Nectaire, St. Saturnin, Chauriat, St. Amable at Riom.

sized blocks, with rubble and honeycomb pattern masonry in the upper parts and beneath the discharging arches, and on gables and apses decorative masonry in many colours and designs. All these varieties are illustrated in Notre-Dame-du-Port at Clermont-Ferrand.

Churches of various plans. Interior

All sorts of types are found. The aisleless church is comparatively rare and generally confined to small villages [Royat, Chambon, Lezoux (P.-de-D.)]. Much commoner is the nave with two aisles (Lanobre, Culhat, St. Martin de Cournon), each member terminating in an apse, as at Mailhat, where, however, the three apses are enclosed in one eastern end.

The transept, sometimes lacking (St. Dier, Chamalières) is usual (Royat), but does not always project, and generally a minor apse opens from the transept arm (Bourg-Lastic). At Royat and Madriat (P.-de-D.) the choir is square ended, but this is unusual, the more usual form being semi-circular with radiating chapels. Occasionally this eastern hemi-cycle is very wide; at St. Dier, for example, it extends to nearly the whole width of the church. When there is an odd number of radiating chapels the middle one is generally dedicated to the Blessed Virgin (St. Dier); when their number is even, four being a common number (Chamalières), it often means that the whole church is dedicated to Our Lady. These radiating chapels are occasionally square (Artonne).

Many churches have a narthex.

The supports are of the same kinds as we shall meet with in the greater churches; columns (Besse-en-

Chandesse), square piers (Chamalières), with attached columns towards the choir and aisle (Culhat) to take the transverse arches, but as the nave vault, as a rule, lacks these, the piers have usually no columns on that side. The arches of the nave arcade are of one order, and there are neither tribunes nor clerestory. The vaults are always of rubble, those of the nave being semi-circular, and being abutted by the half-tunnel vaults of the aisles (Lanobre, Culhat, Plate VIII, fig. 2). The aisle bays are marked off by gable walls on transverse arches. The transept crossing is covered by a dome on squinches (Royat, St. Genès at Thiers, Glaine-Montaigut), the apses have semi-domes and the transept arms tunnel vaults.

Exterior

This is somewhat severe, the building stone being dark and the gabled façade carrying but little decoration. The doorways have triangular lintels [Meiller (Allier), Chambon]; the window soffits are sometimes decorated with billet ornament (St. Genès). Transept and apse are often plain, though sometimes (St. Genès) great care is expended on their ornamentation. Wall arcading and buttresses (Chamalières) relieve, to some extent, the severity of the exterior. In many cases the belfry, often octagonal, that crowned the building, has been destroyed. Some of these small churches are reduced and simplified copies of Notre-Dame-du-Port, without its tribunes (Culhat, Biozat).

The Greater Churches

First among these is Notre-Dame-du-Port at Clermont-Ferrand (Plate VIII, fig. 1), and plan

(Plate IV, fig. 2). The plan comprises a nave with two aisles; a well-developed transept of two bays, the first continuing the aisle, the second forming a projecting arm with an eastern apsidal chapel; a choir also of two bays, one square, the other semi-circular; an ambulatory of the same width as the aisles, with radiating chapels, even in number at Notre-Dame, odd at St. Nectaire. St. Saturnin is exceptional in lacking these.

There is generally a narthex cut off from the nave only by stout piers supporting a gallery.

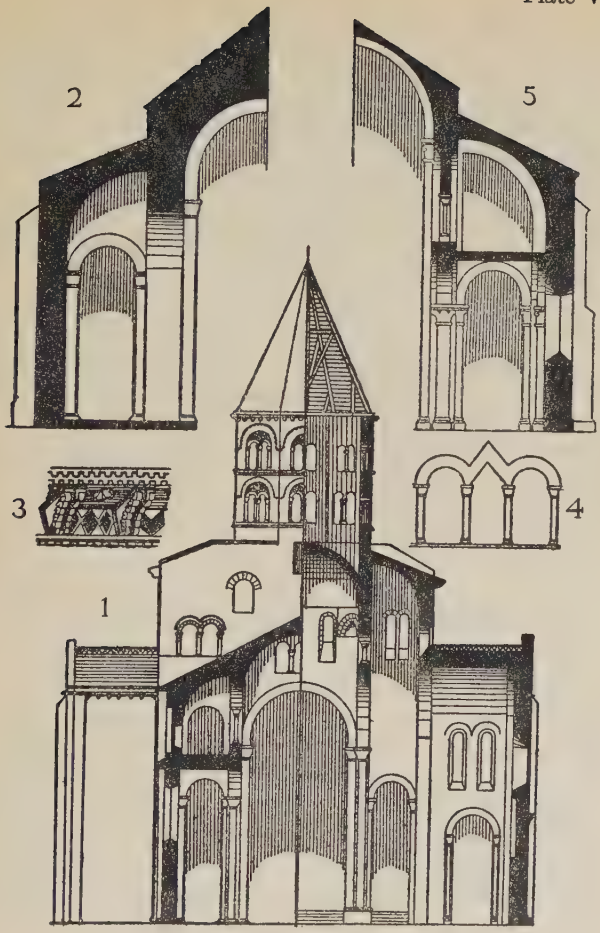
Interior

The piers are square with an engaged half-column on each side. On the side towards the nave this is carried up the wall to support the transverse arch (St. Amable at Riom and St. Saturnin), but at Notre-Dame-du-Port, le Montier at Thiers, and Orcival, these wall columns support nothing. The piers are replaced by simple columns at St. Nectaire.

The nave arcade arches are of one order.

The vaulting of the aisles is ingeniously designed. Broad transverse arches divide the bays, then the groined vaults spring from the abacus of the main piers, follow the line of the arches, and on the other side rest upon imposts continuing the abacus of columns engaged in the wall. This arrangement results in each oblong bay being covered with a nearly square groined vault alternating with a short tunnel vault. Over the aisles are galleries lighted from without, and with windows of two or three lights, with small dividing columns and round or trefoiled heads, looking into the nave.

In most cases the nave has a round tunnel vault, though in a few churches, as at St. Amable, Riom, it



SCHOOLS OF AUVERGNE AND LANGUEDOC

1. Section of Notre-Dame-du-Port (Clermont-Ferrand); left, section of Nave and exterior of Transept; right, section of Transept. 2. Culhat (P.-de-D.) section. 3. Auvergnat cornice with corbels à copeaux. 4. Straight-sided arch between two round-headed, transept arms of Issoire. 5. Section of St. Martial at Limoges.

is pointed. It is invariably of rubble construction and abutted by the half-tunnel vaults of the tribunes. Aisles and tribunes are lighted directly, but as no windows open straight into the nave it is rather dark. Windows opening from the gallery over the narthex relieve the gloom to some extent. The construction of the vaults allows both nave and aisle to be covered by one unbroken slope of roof.

The transept crossing is marked off by four great arches built much lower than the nave vaults. The three arches at the ends of nave and transept arms carry walls pierced with small window openings. So also does the one communicating with the choir, but as the choir vault is at the same height as the arch, the windows in this wall give direct light into the dome that covers the crossing. To north and south this dome is abutted by the vaults covering the first bays of the transept arms, of the half-tunnel variety. The end walls of the transept arms carry two ranges of windows (St. Saturnin has only one), the lower consisting of a straight-sided arch between two round-headed ones (Plate VIII, fig. 4). The choir, with a tunnel vault ending in a semi-dome, is surrounded by an ambulatory with radiating chapels. Windows are pierced between the chapels and below the terminal semi-dome. The ambulatory is tunnel vaulted, but owing to the penetration of the vault cells opposite the arches of the choir arcade and the chapel entrances it has the appearance of being groined.

Exterior

Severity characterizes the west front. There is a central doorway with triangular lintel and a discharging arch above. There is one window. A

gable tops the whole (Orcival, St. Saturnin). St. Nectaire has two square western towers rising from the narthex; Notre-Dame-du-Port has one, a porch tower. The narthex occasionally (Orcival) projects slightly beyond the side walls. The buttresses are of very small projection. They are connected by large wall arches, while above runs a wall arcading with three arches to each bay. At Chauriat there is a simple mosaic frieze running along the upper part of the wall.

The same sort of decoration ornaments the transept arms, their gables being sometimes wholly covered with mosaic work (Chauriat, Notre-Dame-du-Port). The dome, with its lateral abutting vaults, is enclosed in an oblong mass of masonry, sloped off at the ends, and ornamented on every side with projecting wall arcading.

Towers and Eastern End

The central tower is octagonal, but few of the original ones are left. Each side has two ranges of windows of two lights. Orcival has a timber, St. Saturnin a stone spire, both of ancient design but modern construction. These towers rising from the super-elevation of the transept crossing, to which the descending scale of choir and radiating chapels acts as so admirable a foil, are one of the happiest achievements of the Romanesque builders.

Where the radiating chapels open out from the ambulatory, and again where the curve of the choir wall begins, there are triangular gables; the roof is of tiles, slates or shingles, the eaves of carved stone, the buttresses square or columnar; the corbel table is upheld by a large number of corbels *à copeaux*, and ornamented with incised conventional roses

[Ebreuil (Allier), Notre-Dame-du-Port, Plate VIII, fig. 3], the whole eastern end making a most harmonious composition.

Decoration

The upper parts of the walls are profusely decorated with an inlay of coloured stones, probably of Moorish inspiration. This sort of decoration, common in Auvergne, even on small churches, is found sometimes outside of that province, as at Le Puy and St. Martin d'Ainay at Lyons.

The triangular lintels are occasionally sculptured, e.g. the south door of the Notre-Dame-du-Port. The soffits of the windows are decorated with billet molding in monotonous iteration. The capitals are sculptured with foliage and figures; in the narthex some are simply molded with a rather high abacus, also molded. The straight-sided arch is common.

Languedoc[1]

The characteristic features of this school are not clearly defined, but may be summarized as follows:

[1] Principal examples. *Haute-Loire*: Arlempde, Le Puy, Monistrol-sur-Loire, Polignac. *Lozère*: Lanuéjols, La Canourgue. *Aveyron*: Conques, St. Dalmazi, Bozouls. *Cantal*: Mauriac, Ydes, St. Geraud (Aurillac). *Lot*: Carennac. *Lot-et-Garonne*: Le Mas d'Agenais, Monsempron. *Tarn-et-Garonne*: Moissac. *Tarn*: St. Salvy (Albi), Lescure. *Haute-Garonne*: Valcabrère, St. Sernin (Toulouse), St. Gaudens. *Ariège*: St. Lizier (Conserans). *Aude*: Nave of St. Nazaire (Carcassonne), ruins of Alet cathedral, St. Papoul. *Hérault*: St. Guilhem-du-Désert. *Creuse*: Bénévent, Chambon, la Sauterraine. *Haute-Vienne*: St. Martial (Limoges, destroyed), le Dorat, St. Julien. *Corrèze*: Uzerche, Beaulieu.

numerous aisleless churches, round east end common. In the greater churches, basilican plan, ambulatory, aisled transepts, no clerestory, tribunes; exterior severe, doorways often richly decorated, with sculptured tympana, central towers and bell-cotes common.

This school extends from the Rhone to the Limousin, from Velay and the Cantal to the Pyrenees; it takes in the south of Berry and the great pilgrimage churches, but leaves the Roussillon and the borders of the Mediterranean to the builders of Catalonia. To the south of the Pyrenees it is represented by St. James of Compostella and Coimbra cathedral. In such a wide and diversified district it is but natural to find special groups of churches, as, for example, those of the Limousin with their characteristic west fronts, doorways and towers; or the great sanctuaries on the big pilgrimage roads, churches with many points of contact with the south-western school, and modelled possibly upon St. Martin's of Tours; or again others in the Cantal and the Upper Loire influenced by the Puy de Dome, and yet others showing traces of the influence exercised by the strongly individual schools of Catalonia or the south-west.

No special kind of building material characterizes the churches of this school. The builders used whatever came to hand, the variously coloured granites of the Limousin, the sandstone of Velay, or bricks, as in the great church of St. Sernin at Toulouse.

Plans

Here, as throughout the south, there are two main kinds of plan, each with numerous varieties.

There is, first, the aisleless church, which is usually of small dimensions, the nave consisting, as a rule, of not more than three or four bays. The east end, occasionally square, as originally at Sornac (Corrèze) and St. Sornin at Tartaronne (Lozère), is more usually round [Blond (Haute-Vienne)] or polygonal [Les Rosiers d'Egleton (Corrèze) and La Rouvière (Lozère)]. Sometimes a short bay between nave and choir acts as a false transept, as at Chavenet (Lozère), but a real transept is not uncommon [Meymac, Vigeois (Corrèze)], and it sometimes has its own apsidal chapels. Layrac (Lot-et-Garonne) has six bays, a fairly long choir, and a transept with chapels.

Then come the aisled churches, of basilican plan. A few quite small churches are built on this plan, e.g. Nouzerines (Creuse). The aisles are relatively narrow, especially in the Limousin (Bénévent-l'Abbaye, St. Nazaire at Carcassonne). These churches generally have a transept and a semi-circular or polygonal choir, the latter often flanked by two minor apses corresponding with the aisles, e.g. St. Guilhem-du-Désert (originally without a transept) and Mauriac. Sometimes the apse is provided with niches [St. Angel (Corrèze), Roffiac (Cantal)], or again apsidal chapels may open out directly from the apse [Arnac-Pompadour (Corrèze), Alet]. Bozouls and St. Léonard (Haute-Vienne) and a few other churches of this type have an ambulatory.

This school also employs the Benedictine plan [Le Mas d'Agenais; Chateauponsac (Haute-Vienne)], and the Cistercian plan [Obazine (Corrèze)]. Finally it includes a series of great pilgrimage churches built on the basilican plan, with three

naves (five at St. Sernin, Toulouse), wide aisles (Beaulieu), large transept, sometimes with its own aisles [St. Martial at Limoges; Conques, Figeac (Lot)], choir consisting of one square bay and a semi-circular apse, ambulatory and apsidal chapels.

Interior elevation. (Plate VIII, fig. 5.)

In aisleless churches wall piers carry transverse arches, and are connected with one another by great wall arches, e.g. Chadenet and St. Julien at Tournel (Lozère). Where there are aisles the piers are often massive, either square or cruciform [St. Maurice-de-Roche (Haute-Loire)], with flanking columns or pilasters in the Limousin, or else piers composed of four half-columns (Mauriac). Sometimes, as at Bozouls and St. Léonard, columns and piers alternate.

The nave arcades are of one order (St. Nazaire at Carcassonne) or two orders (St. Sernin, Toulouse), either round-headed or pointed. The side aisles, and in the Midi sometimes they alone, are lighted. The nave vault is of the round or, more often, the pointed tunnel variety, strengthened by numerous transverse arches (Layrac, St. Sernin), which are often of two orders. In a few cases small windows are pierced just below the vault, as well as ventilation holes (Bénévent-l'Abbaye, le Dorat). The aisles generally have tunnel or groined vaults (St. Sernin); sometimes, especially in the Limousin, these are set crosswise with, it would seem, a decorative rather than a constructional object. Pilgrimage churches such as St. Sernin and St. Martial (Limoges) have tribunes with half-tunnel vaults (Plate VIII, fig. 5).

A dome on squinches (Mauriac, Conques), or on pendentives (the Limousin commonly, e.g. Obazine)

covers the crossing; St. Junien has a lighted drum. The transept arms are generally covered with tunnel vaults, but at St. Léonard with domes. The choir has a tunnel vault, the apse a semi-dome. In the greater churches, e.g. Beaulieu and Conques, there are half-tunnel vaulted galleries over the ambulatory opening on to the choir. At Conques windows are pierced below the semi-dome of the apse.

Exterior

The west front and side walls are plain and severe, even in such churches as St. Sernin and St. Bertrand-de-Comminges (Haute-Garonne). The builders put all their decorative ingenuity into the doorways with their jambs and tympana, some of which, e.g. Moissac, Beaulieu, Maguelonne, are veritable masterpieces.

Some west fronts in the Limousin, e.g. le Dorat and St. Junien, have a special character. Above the doorway rises a great square tower which is flanked by two small towers with pepper-pot tops. The doorway itself is flanked by two high and narrow arcades; a strictly localized and very imposing type of façade. Elsewhere, as at Les Salles-Lavauguyon (Haute-Vienne) and Lescure, Western influence is visible in the wall arcading of the west front and the absence of a tympanum over the door.

The typical Limousin doorway has one noticeable feature. As a rule, when the doorway is composed of several recessed arches, these rest upon the columns that are both decorative and constructional; but in the Limousin the arches are carried directly by the jambs, while the columns set in the angles receive upon their capitals, which have no abacus, simply the decorative rolls or bowtells that occupy

the internal angles of the arches, e.g. Verneuil-sur-Vienne (Haute-Vienne). Few of these doorways have either a tympanum or a lintel, but many have trefoiled arches, e.g. Palisse (Corrèze). The side walls, supported by massive buttresses, are generally devoid of ornament except, in some cases, for wall arcading between the buttresses. The apse and apsidal chapels are often decorated with a somewhat severe arcading, as at Arnac-Pompadour and la Rouvière.

Belfries

All varieties of bell-cote, occupying various positions, are common on small churches [La Roche-prés-Feyt (Plate VI, fig. 1) (Corrèze), Prunières (Lozère)]. In the Limousin the square porch-tower is common (Bénévent-l'Abbaye), and many churches have a square central tower as well (Chambon-sur-Voueize). Conques has two western towers, Cannes has two flanking the apse, but these are exceptional, the central tower being much the more general.

Spain and Portugal

Catalonia has a place apart since its architecture is connected with that of Lombardy, whereas Spanish Romanesque depends rather upon French. We must remember that, at the time when Romanesque arose, four-fifths of the Peninsula were under Mussulman rule, whose dominion extended to the Douro and the Llobregat, both Tudela and Huesca being in their hands.

We have already spoken of the monuments of

Mozarabic architecture of the ninth and tenth centuries, of which San Miguel of Escalada, consecrated in 913 and restored in 1126, is the type. These are basilican churches with three naves and apses, roofed with timber, with columns in the nave arcades, which nearly always have horseshoe arches. Constructed generally of dressed stone, they are occasionally built of brick (San Tirso at Sahagun).

This native architecture was destined to give way before French influences. At this period the relations between the two countries were continual. During the eleventh and twelfth centuries as many as twenty-nine French military expeditions crossed the Pyrenees to take part in the Spanish crusade against the infidels. At the same time French monks were invited by the Spanish kings to help in the intellectual restoration of their country, and so, here again, Cluny became the propagator of Romanesque architecture.

Its influence can be seen at San Salvador de Fuentes, Sant Marti de Fromista (both in Navarre), at Sahagun, at San Isidro (Leon), St. James of Compostella and St. Vincent of Avila. The great pilgrimage churches of the type of St. Geraud of Aurillac, St. Sernin of Toulouse and Compostella exercise considerable influence.

We shall come across the simple basilican plan at Segovia, for example, well within country reconquered from Islam. At San Antolin of Bedon we find a nave and two aisles with semi-circular apse, a plan common almost everywhere, with or without transept (San Tirso at Sahagun), but the monastic churches utilize all varieties of French plans, especially those of Burgundy, Poitou and Languedoc. At Silos, Benavente, Salamanca and

Tarragona we find the Benedictine, at Santas Creus the Cistercian plan. At Compostella, a great pilgrimage church, the transept arms have their own aisles. But few churches have an ambulatory round the choir; Avila cathedral has one, and the three chapels opening from it are enclosed outwardly in a massive block of masonry. Compostella has five radiating chapels.

The commonest form of support is the square pier with engaged half columns (transept of Compostella); round piers (Siguenza cathedral) and composite piers of columns (Soria) are rare. Alternating piers and columns are seen at San Millan (Segovia). Generally the piers rest upon circular plinths (San Isidro, Leon and Benavente) after the fashion of Languedoc. The arches of the nave arcade, either round-headed (San Vicente, Avila) or pointed (Salamanca old cathedral), are of two orders with right-angled edges.

The greater churches have sometimes nave galleries (Compostella), or a triforium (Avila) and clerestory (San Pedro at Galligans), but as a rule the nave is unlighted, its vaults being abutted by those of the aisles. Where there is a clerestory the aisle vaults are generally groined (Salamanca) and those of the tribunes half tunnels. At St. Martin, Fromista, round tunnel vaults, at St. Martin, Segovia, transverse tunnel vaults cover the aisles, and as their roofs have a very slight inclination, the clerestory windows can be pierced at a level very little above the summit of the nave arcades.

The crossing has a dome on squinches, the use of pendentives (Zamora) being exceptional. The lantern, usually octagonal (Toro), occasionally square (Bedon), is a common feature. The choir,

generally short, has a semi-dome, the ambulatory, where there is one, has groined vaults.

The west fronts recall those of Languedoc and the south-west, with their wall-arcading and richly decorated doorways. These, generally rather low, often have sculptured tympana after the model of Toulouse. The jambs, sometimes with engaged columns (San Miguel d'Estella), also show, by their sculptured figures, the influence of the Midi, where this sort of doorway had its origin.

At San Isidro at Leon, the figures are carved in high relief upon the wall itself, but already at Compostella and Avila we find them grouped together to form statue-columns. Sometimes the jambs of the doorway form a console that, without a lintel or any other support, carries a carved tympanum, e.g. San Isidro, Leon, where a lion's head upholds the projection.

Sometimes, as in South-West France, the tympanum is lacking (Merida, Valencia). The side doorway at Zamora, by its whole appearance, its triple division by high columnar buttresses, its wall-arcading on either sides, its sculptured tympana and the decoration of its recessed arches, is strongly reminiscent of Poitou. The doorway of Toro also shows the influence of the south-west. Numerous doorways have multifoiled arches, e.g. Valencia, Zamora, Puente de la Reina, etc. They are common also in windows (Toro, Hirache), transverse arches (transept of San Isidro), and wall-arcadings. The horse-shoe arch is rare (Merida). The apse is often ornamented with wall-arcading (San Boal and Sahagun) or columnar buttresses.

The towers are often square and massive, with wall-arcading in the lower storey and windows in the

upper only. Battlements are rare (Sant Esteban at Segovia, Nuestra Señora de la Peña); the tower of Sahagun is oblong. Long porches, sometimes stretching along two sides (San Esteban and San Martin at Segovia, and San Salvador at Sepulveda) are a feature of Spanish Romanesque.

Montierneuf at Poitiers probably supplied the model for the small turrets that often accompany the central lantern and dome.

A characteristic sort of capital is square at the top, while the lower part, instead of being spherical, is hollowed out. Finely carved capitals, with figures, foliage and interlacing, are common.

The Latin Orient

The architecture of the Latin Orient resembles that of France. The churches of Jerusalem, Naplouse, and Beyrouth are built on much the same plans as those of Languedoc. The decoration of doorways and windows is in the style of the south-west or Languedoc (St. Mary Major, Jerusalem). The churches are basilican in plan, with nave and aisles, with or without transept (which does not project), three semi-circular apses, sometimes enclosed in a square or polygonal eastern end, and sometimes an ambulatory. The piers have engaged columns, there are no tribunes (except at the Holy Sepulchre), the nave has either pointed tunnel vaults (St. John, Beyrouth) with transverse arches, or groined vaults (St. Anne, Jerusalem), the aisles always have groined vaults, the crossing is domed, the apses semi-domed. The aisle roofs are flat. The decoration is simple, the capitals being of a debased Corinthian type with acanthus leaves.

South-Western School

Characteristic features

Two types of plan: (1) Single nave with domes or tunnel vaults in the southern districts, without vaults in the north; choir simple, usually square, occasionally with semi-circular apse; wall galleries below the windows. (2) Triple nave generally vaulted, sometimes an ambulatory, piers often quatrefoils on plan, no tribunes, no clerestory, high vaults abutted by aisle vaults. West fronts in three divisions (often even in an aisleless church), doorway flanked by wall-arcading, no tympanum, square central towers usual, sometimes with pomegranate caps; richly decorated doorways with figure subjects in the recessed arches.

At the time of the Romanesque renaissance in the eleventh century, the south-west of France, under the rule of the Counts of Poitou, Dukes of Aquitaine, was a comparatively peaceful country, the centre of a brilliant civilization. It was inevitable that the rulers of the great abbeys who, at the councils of Charroux (989-1028) and Poitiers (1000-1026), were strong enough to make the country accept such a thing as the Truce of God, should conceive the design of raising splendid religious buildings.

Poitiers is the centre of the school thus founded, whose influence was felt all through and even beyond the immense district stretching from Brittany to the Garonne and Béarn, from Berry and Perigord to the Atlantic. Hence the churches of Brittany, Maine, Anjou, Touraine, Berry, Perigord, Guyenne, Gascony and Béarn, have, to a considerable extent,

a similar character. Within this school certain families or groups of churches have come into being, either by the habitual employment, or, on the contrary, the exclusion of some feature, or else through the influence of neighbouring schools. Hence, for example, in Berry and the Lower Loire, owing to contact with Normandy and the north, vaulting is uncommon, the transepts are lofty, and great use is made of roll moldings and decorative geometrical designs. Poitou and Charente, on the other hand, favour very profuse decoration, while in Perigord the dome is much used as a method of vaulting. These are local differences, probably due to the influence of some more celebrated church, and not sufficient to constitute distinct schools.

Materials

All sorts of building stone are used: the hard jurassic limestone of Poitou, the softer cretaceous rocks of Charente and Perigord, the granite of Britanny, the Vendée and the central highlands. The builders of Touraine set their soft and spongy tufa with wide joints, as a precaution against dampness. While in Maine and Anjou some decorative effects are achieved with coloured stone of grey and ochre, the builders of Touraine, Poitou and Charente, especially in the twelfth century, prefer to obtain theirs by cutting and working their stone into various designs, such as lozenges, fans, discs, chevrons and so forth. Good examples of this are offered by the west fronts of Notre-Dame-la-Grande at Poitiers, St. Jouin-de-Marnes (Deux-Sèvres) and Villesalem (Vienne), by the apses of Rivière (I.-et-L.) and Rétaux (Charente-Inf.) and the interior of the choir of Lusignan (Vienne).

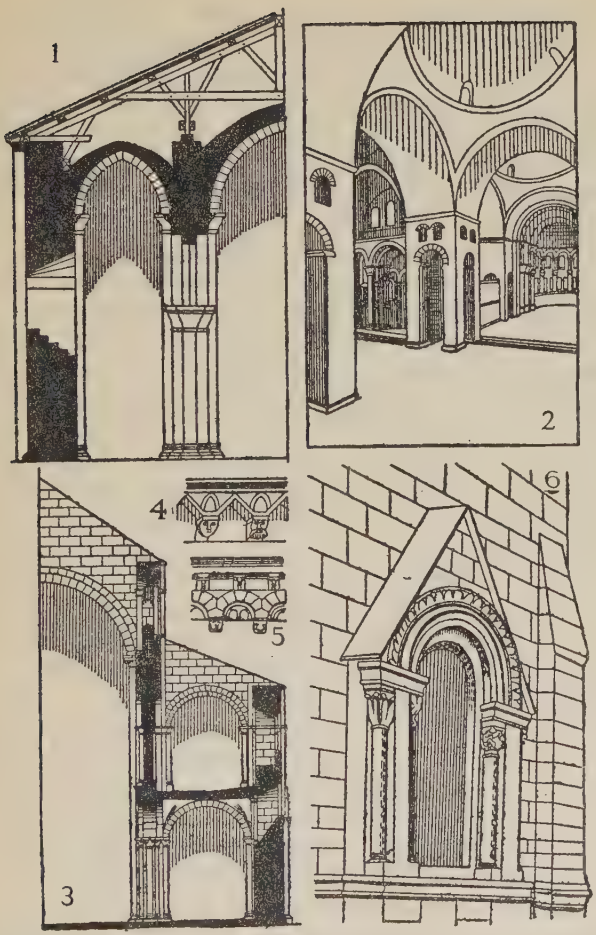
Aisleless Churches.[1] *Plan and Interior*

These are by far the more numerous, Poitou and the Bordelais alone, according to Lefèvre-Pontalis, having over six hundred, and comprise not only small churches, but also such monumental buildings as St. Front at Périgueux.

The aisleless church is found at an early date in this district, St. Hilaire at Poitiers in the eleventh century consisting of a nave, transept and choir with a semi-circular apse, a plan we shall meet with again. The transept is often wanting (Plate IV, fig. 5) [St. Etienne at Cahors, Rétaux (Charente-Inf.)]. The crossing, or in its absence, the bay preceding the choir is vaulted by a dome on squinches (Courcôme, St. Nicolas-de-Maillezais) or on pendentives [Trois-Palis (Charente)].

The nave is often narrow, the choir sometimes narrower still, though sometimes wider. Where there is a central tower, the choir is generally narrow, owing to the encroachment of the supporting piers [St. Lazare at Noyers (Loir-et-Cher), Plassac]. The introduction of the dome enabled wider naves to be built, and the builders to develop their taste for great spacious churches with no columns to interrupt the view. At Cahors, for example, the nave is sixty-five feet wide internally, and no other system of vaulting but the dome could have been used with success for such a span. In

[1] Examples: *Sarthe*: Neuvy-en-Champagne. *M.-et-L.*: Fontevrault. *Indre-et-Loire*: Cormery, Faye-la-Vineuse. *Vienne*: La Chapelle-Morthemer, Clairvaux, Payroux, Pressac. *Deux-Sèvres*: St. Savinien (Melle). *Vendée*: St. Nicolas (Maillezais). *Charente*: Angoulême cathedral, Gensac, Courcôme, Fenioux. *Haute-Vienne*: St. Yrieix, Solignac. *Lot*: Souillac, St. Capsais (Agen). *Dordogne*: St. Etienne (Périgueux). *Gironde*: Petit-Palais.



SCHOOLS OF THE SOUTH-WEST, NORMANDY AND NORTH FRANCE

1. St. Pierre (Melle). Section of Nave. 2. St. Front, Périgueux. Interior. 3. Cérisy-la-Forêt. Section. 4 and 5. Cornices from Vaux near Laon and St. Benoit-sur-Loire. 6. Altar niche, Cuise.

many churches the nave width is considerably lessened at the crossing by the massive piers of the transept arches, which are pierced by small doorways giving access to the arms. This arrangement, common in Berry and the north of this district [Nérondes (Cher), Bommiers (Indre)], is sometimes found also in other parts [Puypéroux, Champniers (Charente)].

The plan of the churches vaulted with a series of domes is the same as that of the others, and where they have a transept this generally has tunnel vaults (Souillac), and but rarely a dome, as at Petit-Palais. The plan is then a Latin cross, St. Front at Périgueux being, by exception, a Greek cross vaulted with five domes.

Apsidal chapels are not common; when found they are generally three in number (Solignac), though Angoulême has four. Ambulatories are exceptional (Fontevrault, Faye-la-Vineuse). There are a fair number of square east ends [St. Etienne at Périgueux, Agonac (Dordogne), Sireuil (Charente)], and a few of trefoil plan, e.g. Montagrier (Dordogne), which has also rounded transept arms, and Marignac (Charente-Inf.).

The interiors of these churches are often severe. At St. Jean-de-Chancelade (Dordogne) and Rétaux the only relief to the monotony of the bare walls is given by the pilasters and engaged columns supporting the transverse arches. At Agonac (Dordogne) and Châtres (Charente) the wall surfaces are broken only by the wall arches supporting the pendentives, the unadorned high windows and the pilasters and columns upholding the transverse arches.

However, wall-arcading, connecting the piers and

forming discharging arches allowing windows to be pierced, is not uncommon (Pressac, Courcôme). In some domed churches this arcading supports a wall gallery running below the windows, passing behind the piers and, very occasionally, continuing round the transept arms (Solignac). To lighten the massive square piers supporting the domes, passage-ways are pierced through them, and occasionally, as at St. Front (Plate IX, fig. 2), smaller openings are made in their upper parts.

Finally there are about sixty churches covered with a series of domes on pendentives. (St. Hilaire at Poitiers has squinches, but is a church by itself to be classed with Le Puy cathedral). It is to be noted that these churches appear towards the year 1100, in the midst of a school that is already clearly defined, and from which they take their plans and their special features. Apart from the domes and certain resulting features, such as the squat square piers, it may be said that they are identical with the churches amid which they are found. We must also note the fact that, in many of them, the domes are not original parts of the building, but replace either collapsed tunnel vaults, as at Champmillon or Roullet (Charente), or timber roofs (St. Hilaire at Poitiers), or sometimes are just additions to a church not originally meant to have them. Hence we cannot class them as forming a special school. For the most part they are found on a line from Saintes and Cahors; but they are mingled with churches of other types, and here and there, as at Fontévrault, Solignac and Agen, exist as isolated units. This is probably because the durable qualities of the dome were realized, since it has been estimated that, in the diocese of Angoulême, while only thirty-six per cent.

of the original tunnel vaults have remained intact, no fewer than seventy-four per cent. of the domes still endure.

However, though it is clear that these churches belong to the south-west of Romanesque, we still have to ask how they came to adopt this special form of roofing.

We know that the single dome made its appearance in Romanesque building in the eleventh century. Those of St. Martin at Angers (about 1020) and St. Gilderic at Lavardin, raised over the crossing about 1042, were supported by methods not exactly ascertainable, possibly rudimentary squinches. Though the building of a squinch does not differ very much, as far as constructional processes are concerned, from the building of a pendentive, it is probable that the builders of the great domed churches would try to copy the process used in the foreign churches they were imitating, especially when their own building methods made this easier for them.

The light Byzantine domes and their pendentives covered with mosaics hardly allowed their constructional methods to be seen, and quite probably the Romanesque architects did not remember much more about them than their general form, for their own methods rather recall those used in Asia Minor and Armenia. These churches with a series of domes date from towards 1100, when Romanesque art was already formed and the builders had mastered their craft. They form a group that seems to have come into being in imitation of some striking success. The most ancient monuments of this type are St. Etienne-de-la-Cité at Périgueux, built between 1101 and 1106, St. Avit Senieur (Dordogne) before 1117,

and Cahors cathedral. Nor is it hard to follow the development of the type and its various modifications from St. Etienne to Angoulême and Souillac. But where did the builder of St. Etienne get his idea? Certainly not from the single dome covering the crossing or crowning a tower. The small size and limited functions of such domes would never lead to the special type of church we are considering. Without a doubt the domed basilica is reminiscent of the East.

The Byzantine domes were constructed of light materials; those of Asia Minor and Armenia, of similar shape but different construction, were built of stone; the churches of Cyprus, e.g. St. Lazarus near Larnaca, St. Barnabas near Famagusta, Peristerona, Hieroskypos near Paphos, with their domes on pendentives supported by pointed arches, their piers with passage-ways through them, their sobriety of ornament, are the true models of our Western churches. It may be, however, that St. Front at Périgueux is a copy of St. Mark at Venice, for their plans are strikingly similar, but the latter church is a copy of that of the Holy Apostles at Constantinople, built between 536 and 546, and the prototype of many churches in the East.

It cannot be too often repeated that, at no time were there more travellers, pilgrims, crusaders and merchants on the roads between Europe and the East than during this part of the Middle Ages. The monuments of the East, so different from what they were used to at home, must have struck them and impressed themselves, at least as regards their main lines, upon their memories. Returning home it was only natural that they should try to reproduce the wonders they had seen.

Aisled Churches.[1] *Plan and Interior*

These are much less numerous than the former class. In the lower Loire the nave is very wide (Fontgombault), but in Poitou and the south generally it is narrow (Notre-Dame-la-Grande, Poitiers). The aisles also are, in general, narrow (Chauvigny). In some cases (Notre-Dame-la-Grande) there is no transept, but where it exists it is generally well developed (Montierneuf at Poitiers), with an apsidal chapel opening from each arm.

The choir, usually semi-circular (Lusignan), rarely polygonal [Gargiless (Indre)], has radiating chapels, generally three (Notre-Dame-la-Grande), rarely an even number (St. Hilaire, St. Benoît-sur-Loire), giving directly on to it (Chauvigny), or on to an ambulatory. St. Benoît-sur-Loire has a second transept, and at Chateaumeillant and Chezal-Benoît, in the same district, the Benedictine type of east end is found.

The supports are of various kinds; St. Savin and Lichères (Charente) have columns, but piers are more usual, and are often either square, cruciform, or quatrefoil on plan, but the most general form is square with four flanking half-columns.

Sometimes the springers of the transverse arches

[1] Principal examples: *Indre-et-Loire*: Preuilly. *Loir-et-Cher*: Selles-sur-Cher, Lavardin. *Loiret*: St. Benoît-sur-Loire. *Indre*: Fontgombault. *Cher*: St. Janvrin. *Vienne*: Notre-Dame-la-Grande and St. Jean de Montierneuf at Poitiers, Civray, St. Savin, Lusignan, Nouaillé, St. Pierre (Chauvigny). *Deux-Sèvres*: Airvault, St. Jouin-de-Marnes, St. Pierre and St. Hilaire at Melles, Parthenay-le-Vieux, St. Laon (Thouars). *Vendée*: Vouvant, La Chaise-de-Vicomte. *Charente*: Lesterps, Cellefrouin. *Charente-Inf.*: Aulnay, St. Eutrope (Saintes). *Dordogne*: Cadouin, Bussiere Badil. *Gironde*: Verteuil.

rest upon columns which are not carried right to the ground, but end in carved brackets (St. Pierre at Chauvigny). Ruffac priory church (Berry) has alternating piers and columns, an exception.

The nave arches are often in two orders, either round-headed (Notre-Dame-la-Grande), or pointed [Les Moutiers-les-Maufaits (Vendee)].

The vaulting system usually adopted (Plate IX, fig. 1) allows no direct lighting of the nave, hence as tribunes would still further diminish the light, they are omitted. The nave vaults are abutted by the aisle vaults, both springing from the same level, a system requiring massive walls to resist the thrust. Still, St. Benoît-sur-Loire and some other churches in the same district have clerestories.

The aisles sometimes have half-tunnel vaults, but more generally groined vaults (Lesterps).

The transept crossing, sometimes with a panelled roof in the lower Loire district, is generally elsewhere vaulted with a dome on squinches [Bouresse (Vienne), St. Aignan (Cher)], or pendentives (Garglesse), which in some rare cases is ribbed [St. Maurice-en-Gençay (Vienne)]. Tunnel vaults cover the transept arms.

The choir arches are round-headed, occasionally stilted (Fontgombault). In the lower Loire country wall-arcading runs below the choir windows (Preuilly). The square bay of the choir has a tunnel vault, the apse a semi-dome, the ambulatory groined vaults as a rule.

Exterior

The churches of the south-west do not always show that correspondence between the arrangement of the west front and the internal disposition of the

church that we noted as one of the marks of Romanesque sincerity. This is particularly the case in Poitou and Charente. The usual arrangement here consists of a central doorway and two lateral blind arcades [Notre-Dame at Poitiers, Châtres (Charente)], while in many cases the threefold division is emphasized by column buttresses carried up to the gable (St. Jouin-des-Marnes); at Serigné (Vendée), an aisleless church, with a bare west front, the division is effected by half-columns. In these examples, which are typical of most, there is a window over the door also flanked, when there are no buttresses, by arcading. The arcading flanking the doorway often frames statues, one of which sometimes shows a horseman trampling upon a small figure on the ground, representing, as there are documents to prove, the Emperor Constantine's victory over paganism. At Parthenay-le-Vieux and Notre-Dame-de-la-Coudre (Parthenay) Samson overcoming the lion faces him on the other side.

The summit of the façade generally consists of a gable, which may take various forms, but sometimes, e.g. Echillais, it is a straight horizontal line. The angles of the façade are often occupied by buttresses formed of a group of columns ending in a turret with a smooth or fish-scaled pepper pot top.

The doorway has no tympanum, as a rule, though there are some exceptions, as at Civray, the round church of St. Michael at Entraigues, and Lichères (Charente). In the last named church, it is crescent-shaped and is supported by a lintel forming a segmental arch. On the other hand the lateral arcades have often richly carved tympana [Angoulême cathedral, Ruffec, Foussais (Vendée)]. At Vouvant the side entrance, which is deeply recessed, contains

two small doors, but there is little ornament. The recessed arches of the doorways are often multi-foiled [Le Vigeant (Vienne), Châtres], and at Fenioux (Char.-Inf.) is one of the rare examples of a single doorway taking up the whole of the lower part of the west front.

The monotony of side walls and transept, relieved at most by some sculptured windows, is compensated by the beauty of the east end. The apse, whether simple or accompanied by minor apsidal chapels, has an harmonious effect, with its buttresses, often composed of grouped columns, its richly carved windows (Rioux), its arcading either near the ground (Chauvigny), or below the cornice (St. Maurice-en-Gençay).

Finally the corbel table with its well-carved corbels, and between them sometimes small bas-reliefs (St. Hilaire, Poitiers; Rioux), and above, especially in Poitou, the arcaded and embrasured cornice, is a fitting finish to a delightful picture.

Towers

In the lower Loire district porch towers, usually square, are common, the most imposing, though never finished, being at St.-Benoit-sur-Loire. Elsewhere they are somewhat rare. The first floor chamber sometimes opens towards the nave, forming a tribune (St. Savin-sur-Gartempe), with only narrow openings towards the exterior. The upper storeys are well-lighted and the whole is ornamented with arcadings and cornices marking off the different storeys.

St. Maurice at Angers is almost the only example of two west towers; lateral towers are not uncommon, especially in Touraine [St. Jean des Grès

(I.-et-L.)], but in all districts the central tower is most usual.

It is square, adorned with arcading and covered with a pyramidal roof. Towards the top it sometimes becomes octagonal or round, and the uppermost stage, which is composed of massive piers with perforations, supports an almost conical spire with somewhat of the appearance of a pomegranate [Notre-Dame Poitiers (Plate VI, fig. 3), Cuon (M.-et-L.); Périgueux; Charly (Cher)]. This sort of spire is common in Poitou and Charente; but other varieties are found, e.g. a four-sided pyramid at Civeaux (Vienne), octagonal at Cunault and Langeais (I.-et-L.) with dormer-windowed turrets at the angles of the topmost square storey, and conical, but smooth of surface, with four spirelets at the base, at Déols (Indre). There are, finally, some examples of octagonal towers, e.g. Maison-Dieu at Montmorillon (Vienne), and Bléré (I.-et-L.), and bell-cotes.

Decoration

In default of tympana, figure sculpture spreads itself all over the west front, from plinth to gable, e.g. Poitiers, Angoulême, St. Jouin-de-Marnes, around the apse, as a frieze, e.g. Selles-sur-Cher, St. Paul-les-Dax (Landes), and in the soffits of windows and embrasures of doorways, where the figures often follow the curve of the arch, as in the many examples of the struggle of Virtues and Vices [Aulnay, Argenton-Château (D.-S.), Pont-l'Abbé (Char.-Inf.)]. But in another kind of ornamentation, that is even more common, each voussoir of the arch is carved separately, repeating indefinitely the same sort of design, whether it be some theme of iconography such as the Elders of the Apocalypse, their

number equalling that of the voussoirs (Aulnay), or some geometrical design or foliage. Figure sculpture, though very common, is not universal, even where the ornamentation is profuse; at Villesalem (Vienne), for example, the west front and side doorway are richly decorated with finely executed conventional designs, and other parts are adorned with decorative rosettes executed in the masonry itself; similar schemes of ornamentation may be seen on the apses of Rioux and Rétaux, and the west fronts of Echebrune and St. Nicolas-de-Maillezais (Vendée).

CHAPTER IV

SCHOOLS OF NORMANDY AND NORTHERN FRANCE

NORMANDY[1]

Characteristics

Benedictine plan common, wide nave and aisles, large number of bays, especially in England, few square east ends, except in England, gabled walls on transverse arches, occasional alternation of pier and column, hatching on piers in England, tribunes, wall galleries below windows, naves unvaulted, except for ribbed vaults in England, lanterns; transept tribunes on piers, square western towers, tympana with incised stars, gables, intersecting arcading, stone spires, geometrical ornament, scalloped capitals.

Normandy, which, when Romanesque art was being born, was enjoying a period of great intellectual and economical development, has left us some

[1] Examples: *Seine-Inf.*: Jumièges, St. George (Boscherville), St. Ouen (Rouen), Graville-Ste.-Honorine. *Calvados*: La Trinité, St. Etienne and St. Nicolas at Caen, Secqueville-en-Bessin, Bayeux (nave), Notre Dame de Guibray (Falaise), Ouistreham. *Orne*: Notre Dame (Domfront). *Eure*: Bernay, Routot. *Manche*: Cérisy-la-Forêt, Mt. St. Michel (nave), Lessay. *England*: Durham, Ely, Peterborough, Worcester, Waltham Abbey, St. Alban's, Tewkesbury.

imposing architectural monuments. Much of the credit is due to the powerful Norman dukes and the great monasteries. The part played by such great Italian abbots as Lanfranc and William of Volpiano is not so easy to determine. Their intellectual and moral influence was certainly immense, and much splendid building was, undoubtedly, due to their inspiration, but it is by no means certain that they had any part in the material direction of architectural enterprise, or that they introduced their native Lombard processes into Normandy and England. In those regions into which Italian influence penetrated, the monotonous Lombard bands are endlessly repeated. From Catalonia to the Rhineland they are to be seen everywhere, and must almost have forced themselves upon the builder. But they are not to be found in Normandy. The use of gable-carrying arches, and of the alternation of massive and slender supports, which is rare however, may be explained by constructional needs and the common employment of timber roofs. As for cubical capitals, their direct introduction from Lombardy cannot be proved. Their very simplicity must have been a temptation. In any case the Norman builders preferred the scalloped capital. Any Lombard influence must have been exceedingly slight and on matters of detail only.

The Norman school, clearly defined from the middle of the eleventh century, is very homogeneous. From Normandy it extends its influence over the adjoining districts of North Brittany, Maine, the neighbourhood of Paris [Gassicourt (Seine-et-Oise)], and as far as Picardy.

Two buildings may be mentioned as the school's prototypes, viz. Jumièges, or possibly the Romanesque cathedral of Rouen, on which Jumièges may

have been modelled, and St. Etienne at Caen, built by William the Conqueror, reason enough, doubtless, for its having been taken as a model in England, rather than the other and older type.

The English churches of this school are distinguished by their size, their lofty and massive piers, the length of their naves and number of bays, the ornamentation of the piers and simple character of the capitals, and their square east ends. As a rule the door lacks a tympanum.

In Ireland, e.g. Maghera (Londonderry), the door jambs are set with a slope. Celtic ornament with interlacings and monsters is common. Numerous round towers, with doors in the first storey, adjoin the churches (Slane, Iniscalptra); these are also found in England (Little-Sarham). From England Romanesque architecture found its way into Norway and Iceland (Trondhjem and Stavanger), and one may also see Norman influence, due to Robert Guiscard's campaigns, in the two Sicilies (Cefalu).

Excellent building materials are provided by the limestones of Normandy and England and the granite of Brittany and the Norman forest zone. Caen stone was often exported to England and elsewhere, being used, for example, in Canterbury cathedral.

Plan

The Benedictine plan is dominant, and is used so often that it has sometimes been called the Norman plan. Excellent examples are St. Georges, Boscherville; St. Nicolas, Caen; and St. Mary's, York. It is characterized by the choir, with parallel minor apses opening from the transept or the aisles, and forming outwardly a gradation from transept to apse. The side chapels are often square-ended (Cérisy-la-

Forêt). Though some of the smaller churches are aisleless, e.g. Mouen (Calvados), most have aisles which are wide, while the nave, especially in England, is notable for its length, Norwich having fourteen bays. The transept, occasionally lacking (Ouistreham), is usually both wide and long (Durham, with transept aisle), and some of the greater English churches, e.g. Winchester, have a second, shorter transept at the west end.

Whereas the east end is but rarely square in Normandy, except in a few small churches [Manéglise (S.-Inf.)], it is usually so in England, even in large buildings (St. Cross, Winchester). A few choirs have an ambulatory, e.g. Jumièges, Fécamp (S.-Inf.), Bury St. Edmunds, Winchester.

Interior

In the Jumièges type of church the interior elevation is as follows: lofty nave arcades, low tribunes with windows above, e.g. Bayeux, Durham.

Very different are the proportions of St. Etienne, Caen and Cérisy-la-Forêt (Plate IX, fig. 3), where the tribune openings are broad and lofty, and a wall gallery, usually absent in the other type, runs beneath the windows, e.g. Ely, Winchester. The Norman nave, lofty and well lighted, has an imposing appearance.

The piers, sometimes round (Ouistreham, Thaon, Gloucester), are more often square or cruciform, flanked with two, four, or even eight columns (St. Etienne, Caen), while some, especially in England, are on a more complicated plan (Ely). As in many cases the nave was not vaulted, and there are, therefore, no transverse arches, the piers are sometimes quite flat on the nave side; yet there is often an

engaged column running up the nave wall, the purpose of which cannot always be ascertained. Possibly it may serve to strengthen the wall. Occasionally, however, it does not reach the top, having been used, more logically, to support an arch carrying a gabled wall to uphold the timbered roof (Cérisy-la-Forêt, Plate IX, fig. 3). This would seem to have been the case originally at Boscherville and Durham.

The arches of the nave arcade are round-headed, of two orders [Secqueville-en-Bessin (Calvados)], either molded (Bayeux cathedral), or with geometrical figures (Waltham Abbey). The aisles are usually timber roofed, though some have groined vaults (Jumièges). The tribunes, seldom absent except in small churches, are occasionally vaulted (sometimes as an afterthought). When unvaulted they are well lighted, and towards the nave the window openings are grouped in pairs or triplets under discharging arches (Jumièges), or singly, each one then occupying the full length of a bay (St. Etienne, Caen). In some important churches the tribune is replaced by arcading (La Trinité, Caen) or by a false tribune or triforium (Boscherville).

Above the tribune and immediately below the clerestory windows runs a wall gallery, separated from the nape by an arcade, each bay having a high central arch enclosing the window and two smaller side arches (Ouistreham). At Cérisy-la-Forêt all three are equal. Sometimes, especially in England (Gloucester, Tewkesbury), the tribune is low compared with the clerestory, in which, as at Mont St. Michel, there are two windows to each bay.

Though the Norman school, as a whole, was not

greatly enamoured of vaulted roofs, the ribbed vault was used in England from a very early date, possibly from the end of the eleventh century, since, according to J. Bilson, those of Durham are original and of that time, and those at Winchester and Peterborough not much later. But in many cases the vaults are a later addition.

Above the transept crossing there is generally a lantern, originally with a panelled roof, and sometimes of great size, especially in England (St. Etienne and La Trinité, Caen, and Southwell). In the middle of the transept arm a pier supports the outward side of a tribune (St. Nicholas, Caen; Boscherville), and sometimes the transeptal apse is built with an upper storey opening into the tribune (St. Ouen at Rouen; Cérisy-la-Forêt).

The choir is lofty, long, and generally as wide as the nave; in many cases the wall gallery is continued round it from the nave, between its two rows of windows. At Cérisy-la-Forêt the choir has a second wall gallery in place of a tribune. The apse is often vaulted with a semi-dome.

Exterior

The west front, often bare and severe, is sometimes adorned with one (Mouen) or two (Ouistreham) lines of arcading, and occasionally set off by two imposing square western towers (St. Etienne, Caen). The arches of the doorways are decorated with various geometrical designs. Where there is a tympanum, which is sometimes lacking (Thaon), it may be left bare (Boscherville), ornamented with incised stars and other figures (Beaumais), or in some cases reduced to very small proportions by a lintel forming a segmental arch [Cintheaux, south

door (Calvados); Ouistreham]. Occasionally a projecting gable surmounts the door [Ducy (Calvados); Stavanger (Sweden); Kelso].

Side-walls and gables are often decorated with arcading, sometimes intersecting [Graville-Ste.-Honorine (S.-Inf.); Huppain (Calvados)], which is especially common in England.

The larger windows sometimes have the several recessed orders of their arches supported by small columns, or are decorated by simple moldings without capitals (Thaon). Arcading ornaments the lower part of the apse (Boscherville; St. Nicolas, Caen), while the buttresses are either half-columns, or rectangular of slight projection.

Towers

These are square, and are generally placed at the extremities of the west front (La Trinité, Caen; Jumièges) or along one of the sides (St. Loup at Bayeux, Plate VI, fig. 2). Central and porch towers [Colleville-sur-Mer (Calvados)] are not numerous.

The scheme of decoration usually adopted is that of lofty and narrow arcading in the second storey and windows above. The Bayeux district is noted for its fine stone spires, that of St. Loup being exceptionally lofty and slender, and decorated, as are some others, with angle moldings and fish-scale work.

The decoration is mainly of a geometrical character: stars, billets, lozenges, zigzags, chequers and so forth in great variety. The capitals have interlacings and foliage (St. Etienne). In the twelfth century particularly they are often of the cushion variety or scalloped, and every variation and deformation of this type is found.

School of Northern France[1]

Characteristics not very clearly defined; basilican plan; vaulting exceptional, windows round-headed; doors with tympana, arcaded corbel tables.

With its centre in the old Royal Domain, the Ile de France, this school takes in the ancient ecclesiastical provinces of Sens and Rheims, extends to Touraine, Blois, Normandy, Flanders, Hainault, includes Champagne, and encroaches upon Burgundy and the duchy of Orleans.

The best preserved of its churches are small and poor buildings, its monumental edifices having suffered much from time and its changes. From what can now be seen it might appear that this district, though taking a foremost place as a centre of intellectual and political life in the Romanesque period, had neglected architecture. A study of the historical records corrects this impression, and shows that the north of France was as well provided with splendid architectural monuments as any other province. It must be remembered that this was the true birthplace of Gothic, which had already appeared by 1125; by the middle of the century great Gothic churches were being built, and the natural wish to be up to date led to the destruction of many Romanesque churches and their rebuilding in the new style.

The materials at the builders' disposal throughout this wide district were abundant and excellent.

[1] Examples: *Seine-et-Oise*: St. Germain-des-Près, Cormeilles-en-Vexin. *Oise*: Breuil-le-Sec, Morienval, Cuise, Coudun, Villiers-St.-Paul, Tracy-le-Val. *Aisne*: Urcel, Bruyères. *Pas-de-Calais*: Lillers. *Seine-et-Marne*: St. Pathus, St. Loup (Naud). *Marne*: St. Rémy (Rheims) Vertus. *Somme*: Berthaucourt.

Limestone and various calcareous stone of first-rate quality from the quarries of the Oise and the Aisne and the neighbourhood of Boulogne, and the blue-black marble of Tournai and Hainault, provided opportunities for effective contrast such as we see in the abbey of St. Pierre-d'Oudenbourg at Bruges (1081), where the capitals in the white stone of Boulogne show up so vividly against the walls and columns built of the sombre stone of Tournai.

Plan

The more usual plan, even in small buildings [St. Baudry (Aisne)], is the basilican; the nave and aisles are narrow, the transept well developed, with a minor apse to each arm [St. Léger-aux-Bois (Oise)], the choir simple, especially in the eleventh century, occasionally square-ended [Ressons-le-long (Aisne)], more usually semi-circular [St. Germain-des-Prés at Paris; Borzy-le-Sec (Aisne)], and, in the twelfth century, with minor apses (St. Léger-aux-Bois), or an ambulatory with radiating chapels [Poissy (S.-et-O.); St. Germer (Oise)]. In the Soissonnais the choir, and occasionally the transept, have square or semi-circular altar niches (Plate IX, fig. 6).

Interior.

In unvaulted churches square piers [Château-Landon (S.-et-M.); Vignory (H.-M.)], or columns (St. Pierre-au-Parvis, Soissons) are used, but as a rule the piers are flanked by two half-columns to take the springers of the nave arcade. Alternation of piers and columns is exceptional (St. Loup-de-Naud, Plate V, fig. 1). The nave arcade is generally in two orders, and from the beginning of the twelfth century the arches are often pointed (Lillers).

Tribunes (St. Remi at Rheims) are very uncommon even in the larger churches. This school was late in giving up the round-headed window, which is sometimes pierced above the pier instead of in the middle of the bay [Pontpoint (Oise)]. Apart from such exceptional churches as St. Loup-de-Naud (Plate v, fig. 1), where the nave has groined and the aisles have tunnel vaults, vaulting is not used. The timber roofs often rest upon gable walls whose arches spring from high half-columns bonded into the walls [Cerny-en-Laonnais (Aisne)]. In some cases the columns alone remain. Except in a few churches, e.g. St. Pierre de Montmartre, the aisles and transept are also timbered, but the apse, as a rule, is semi-domed, often in the Soissons district, with an altar niche below it; at St. Martin (Laon) the square-ended choir used to have three of these, at Cuise there is one in the choir and one in each transept arm.

Exterior

The division of the west front, which is severe, is a faithful reflex of the threefold internal disposition. Tympana, sometimes with geometrical ornament, are usual. The head of the doorway is sometimes framed within a gable or a pediment [Rhuis (Oise), Le Wast (Pas-de-Calais)]. Richly decorated doorways, e.g. the side door of St. Etienne at Beauvais, are rare. The apse is well proportioned and ornamented. The column buttresses sometimes become more slender at the window level to end in ornamental capitals topped with pyramidal weathering (Bruyères). The altar niches add to the effect by their exterior projection, with their heads framed in gables (Cuise). The corbel table, with arcading of

various sorts, sometimes of straight-sided arches, and sometimes with crenellations, completes a pleasing composition.

Towers.

Lateral towers (Bruyères, north transept arm) and porch towers (Morienval; St. Germain-des-Prés) are uncommon, the usual position being central. They are generally square, sometimes becoming octagonal in the upper stages (Tracy-le-Val). They end in saddleback roofs [Voillecomte (Haute-Marne)], or in four-sided or eight-sided spires [Orgeval (S.-et-O.)].

Decoration

This is mainly geometrical, recalling that of Normandy. The capitals are cushions, some have leaf ornament, a few have sculptured animals (Bruyères) or human figures (St. Germain-des-Prés).

CHAPTER V

PISAN SCHOOL. LOMBARDY. OTHER ITALIAN BUILDINGS. CATALONIA. RHINELAND

Pisan School

Characteristics

Rich materials; coloured marbles; plan very similar to that of the basilicas; single semi-circular apse; often no transept; piers or columns; simple nave arcades; nave and aisles timbered; apse semi-domed and the contiguous bay sometimes vaulted; west front with lines of arcading; arcading on sides and apse; square lateral towers; arches becoming narrow towards imposts.

Round about the powerful republic of Pisa, and in its island dependencies of Corsica and Sardinia, many churches of a special type were built, with the Duomo at Pisa as their foremost representative. The builders had rich materials at their disposal, in most cases marble [Pisa, Lucca, Mariana (Corsica)], or travertine [Nebbio (Corsica)], or stone of different colours [S. Giovanni fuor Civitá (Pistoia), Saccargia and Milis (Sardinia)].

Plan

Basilican. The general arrangement is simple, closely resembling that of the early basilicas. The

smaller churches, e.g. Saccargia and S. Giovanni fuor Civitá at Pistoia, are aisleless; the larger have aisles and a simple semi-circular apse [Nebbio and Poro Torres (Sardinia)]. The Duomo, Pisa, has four aisles. Some churches have transepts, e.g. S. Paolo at Ripa d'Arno, thirteenth century, and the Duomo, Pisa, where each arm ends in an apse like that at the east end.

Interior

This is very simple. In the Duomo, Pisa, the nave arcade is of antique columns, but usually slender square piers are employed (La Canonica and S. Perteo at Mariana); the arches are of one order with square edges. At Nebbio piers alternate with columns, an exception.

The aisles are lighted, and occasionally the nave also. The roof is timbered—Pisa has an elliptical dome—and a semi-dome covers the apse. Nebbio again is exceptional in having groined vaults over nave and aisles, though in some other churches, e.g. Mariana, the bay next to the apse is treated in this way.

A peculiar feature distinguishes the arches more or less everywhere; the voussoirs diminish in size from the key downwards (Plate x, fig. 5). We find this not only in the churches of Pisa, Lucca, Pistoia, etc., but also in Southern Italy at Trani and Bari.

Exterior

Many churches, e.g. S. Paolo a Ripa d'Arno (Pisa), Troja cathedral, S. Giovanni fuor Civitá (Pistoia), S. Michele (Lucca), have taken the west front of the Duomo at Pisa as their model. It has three doors with lintels under discharging arches.

Above this arcading runs right across the front, and over this again arcaded galleries rise one above the other to the top of the gable. At S. Paolo (Pisa) and Lucca cathedral there are three of these, while S. Michele (Lucca) has four, necessitating the raising of the gable two stages above the level of the roof.

In smaller churches, as Nebbio, there is only one (central) door with a tier of arcading above it; in the centre is a window, and over that another range of arcading corresponding with the width of the nave. The side walls are left bare in smaller churches, and relieved only by simple round-headed windows and an arcaded corbel table. The greater churches carry more ornament. At the Duomo, Pisa, ranges of arcading and pilasters decorate side walls and transept arms, and at S. Giovanni, Pistoia, a striking effect is produced by alternate courses of black and white marble. At S. Paolo, Pisa, and S. Michele, Lucca, one of the galleries is carried from the west front along the sides, but not along the transept.

The apse, bare in small churches (Saccargia), is generally decorated with handsome and wide molded arcading, supported by columns (Mariana), or slender pilasters (Porto Torres).

Towers

Lateral towers are common, central towers with a lantern (Pisa) are rare. The Leaning Tower of Pisa is round and has six tiers of galleries. It is one of the few standing apart from the church. Most of the towers are square, with arcading on the lower stages, galleries sometimes above (Pistoia), or slender windows which increase in number with each successive storey (Duomo, Lucca).

Ornament

This is simple but of good execution, and the leafage of the capitals is well designed. Except on some of the towers, e.g. Duomo, Lucca, there is an almost complete absence of Lombard bands.

School of Lombardy[1]

Characteristics

Basilican plan; choir semi-circular, sometimes with niches all round the wall; two flanking apses; gable walls on transverse arches; tribunes sometimes; vaulting uncommon but some ribbed vaults; exterior monotonous, with Lombard bands; west front sometimes sculptured; canopied porches with columns supported by crouched animals; high wall galleries around the outside; lofty square towers; trapezoidal capitals; saw-tooth and lozenge moldings.

Lombardy, or rather North Italy, for the school is not restricted to the one province, developed a very special style of architecture as early as the end of the tenth century. It produced eminent architects, while its masons, the "maestri comacini," i.e. those who worked "con machine" or ingenious scaffoldings

[1] Examples: *Italy*: Sant Ambrogio and Sant Eustorgio at Milan, San Carpoforo and San Fedele at Como, Verona cathedral and S. Zeno, S. Michele (Pavia), S. Miniato (Florence), cathedrals of Ancona, Trent, Torcello, Cremona, Aosta, S. Michele (Chiusi).

France: Embrun cathedral (Hautes-Alpes), St. Martin-d'Aime (Savoy), Sassenage (Isère), Digne (Basses-Alpes), Saorge (Alpes-Marit).

Switzerland: Romainmôtier, Zurich cathedral.

Dalmatia: Grado, Arbe, Trau, Zara cathedral.

and other devices, were in great request. The influence of this school was widespread, being felt in Italy and along the Adriatic coasts in Dalmatia, then spreading northwards to Switzerland, Austria and Hungary, passing up into the Rhineland, whose architecture is an offshoot of the Lombard school, and penetrating westwards to Savoy, Burgundy (Tournus) and by the Mediterranean to the Balearic Islands, Corsica, Catalonia and the Roussillon.

The masonry in small churches is often of rubble roughly dressed, but in larger buildings it recalls the massive work of earlier days, while frequent use is made of black and white marbles with rich decorative effect.

Plan

When we recall that San Clemente at Rome was built, in Romanesque days, exactly like an ancient basilica, we are not surprised that, in a district so full of Latin traditions, the predominant plan is the basilican, even in small churches such as that of the Isola Comacina. The nave is very wide and the aisles proportionately broad [Santa Maria Antica, Verona; Pieve delle Cellole; St. Martin d'Aime (Savoy)]. The transept, sometimes absent (Saorge; San Remigio, Pallanza), sometimes loftier than the aisles though not projecting (San Salvatore at Capo di Ponte), is in other cases fully developed (cathedrals of Acqui and Trent). The east end consists of a semi-circular apse, often flanked by two smaller ones corresponding with the aisles (Santa Maria, Naula; Duomo, Cremona). The choir is sometimes long (Sant Abbondio, Como). Niches not uncommonly are let into the walls of choir and apse (San Paragorio, Noli; Santa Sophia, Padua).

In a few churches the choir is planned as a trefoil (San Fedele, Como; Gravedona, two churches, Lake Como), which is considered a specifically Lombardic plan.

This basilican plan is sometimes modified by French influence, which gives us radiating chapels opening either directly upon the apse (Chiusi abbey), or upon an ambulatory as at Sant Antimo and Acerenza.

Interior

The supports are of many kinds; round piers at Sant Abbondio; monolith columns at Santa Maria Antica, Verona; square piers at San Benedetto, Lenno; cruciform at San Carpoforo, Como; square with engaged shafts at Vigusolo.

The alternation of slender and massive piers, or of piers and columns, is common, being found in the tenth century church of SS. Felice and Fortunato at Vicenza, and at San Miniato, Florence. At San Zeno columns are carried up the walls to receive the arches carrying gable walls to support the roof. This feature is first met with at Lomello (1025) in the aisles. It is of Eastern origin (Rusafah).

The nave arches are in one order at Sant Abbondio, in two at Vallouise (Hautes-Alpes); the latter type predominates, especially in the twelfth century (San Paragorio, Noli; San Zeno, Verona). The windows are round-headed and plain. Only some of the greater churches have tribunes (Sant Ambrogio, Milan, Plate x, fig. 1; San Michele, Pavia).

Many churches have timber roofs resting on transverse gable walls (Pieve delle Cellole; San Carpoforo, Como). But tunnel and groined vaults over the nave begin to appear in the second half of the eleventh century (San Remigio, Pallanza and Santa Maria,

Naula); even ribbed vaults, with ribs of square section, are found at Sannazaro-Sezia (perhaps 1040-1060), San Nazario, Milan (1075-1093), and Sant Ambrogio, Milan. But, just as in England, the builders were unable to carry their invention to its logical conclusion. These vaults proved of doubtful stability: some of them collapsed; the builders abandoned the idea and went back to timbered roofs, or in some cases, under French monastic influence, to round tunnel vaults, as at Santa Fede at Cavagnolo, where we can see the influence of Sainte Foy of Conques.

The aisles, as early as the eleventh century, often have groined vaults, two bays of the aisle corresponding to one of the nave (San Severo, Bardolino; Capo di Ponte). The transept crossing, timber roofed in the earlier cases, was soon provided with a dome on squinches (Acqui cathedral; Sant Egidio at Fontanello al Monte), though the naves retain their timber roofs. The dome afterwards becomes common and often surmounts a lantern (Sant Ambrogio, Milan).

The apse is semi-domed, has niches round the wall, and is often, especially in the twelfth century, arcaded.

Exterior

This is often very plain, the only ornament consisting of Lombard bands, a feature found in Assyrian building, in Roman and Byzantine work (baptistery Ravenna), and adopted as a constant note in Lombardic architecture and its dependent schools.

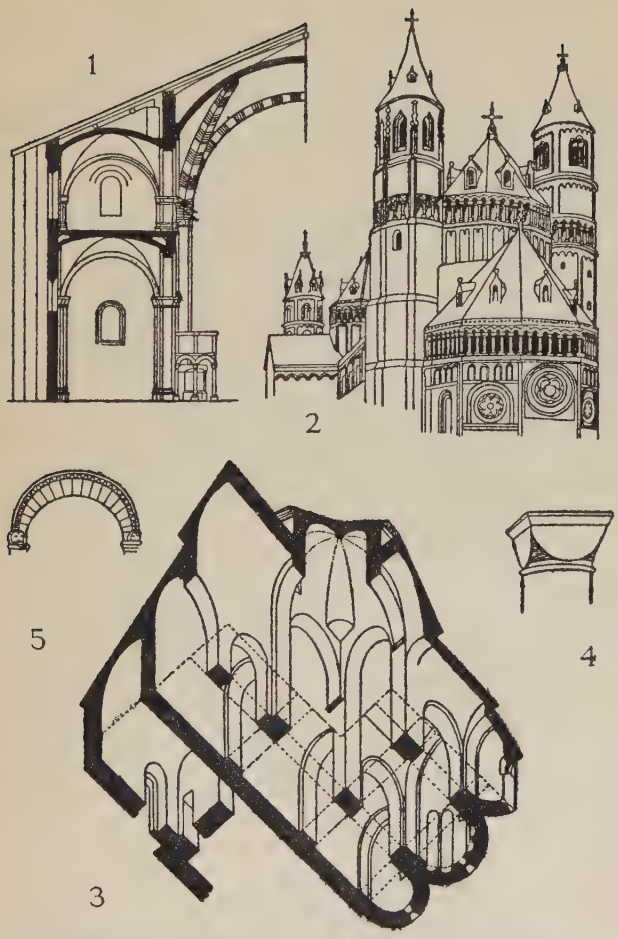
In the usual type of church the west front is a straight wall ending in a central triangular gable with two wings corresponding to the aisles, e.g.

Pallanza; San Stefano, Bologna; Sant Abbondio. The only decoration is supplied by Lombard bands and small arcaded cornices. Pilaster strips or buttresses divide the façade in accordance with the interior divisions. Some west fronts, however, are more richly adorned, the door having a sumptuously carved framework (Assisi cathedral), and in a few cases a tympanum elaborately carved.

At Verona cathedral the narrow recessed arches of the door rest upon slender columns, some of them twisted, while the intervening spaces are decorated with statuettes, scrolls and bas-reliefs which are continued upon the wall. The same scheme of ornamentation is to be seen at San Zeno and the cathedrals of Parma and Modena, while at San Michele, Pavia, the greater part of the façade is covered in this way. Wall galleries with slender columns are also employed at San Zeno and Cremona (a double line), at San Michele, Pavia, and Parma (following the gable slopes), and at Cremona and Trent, where they are carried along the side walls, the transept arms and the apse. The simplest form of this sort of gallery consists of a series of small niches immediately below the cornice in the Carolingian church of Agliate, and later reproduced in the Romanesque edifices of San Giovanni dei Campi at Piobesi Torinese, at St. Martin d'Aime and St. Guilham-du-Désert (Herault).

Occasionally the choir has a high narrow arcading (San Fermo, Verona), but for the most part the Lombard bands are the sole ornament.

The porch is a specially effective feature of many churches. It consists of a canopy supported by marble columns resting upon crouching animals, usually lions or griffins (Verona cathedral and San



LOMBARDY, RHINELAND, CATALONIA, PISAN SCHOOL

1. Sant Ambrogio, Milan. 2. Worms Cathedral, apse; Gothic details. 3. Sant Llorens del Munt (Catalonia). 4. Cushion capital, S. Abbondio. 5. Arch, S. Paolo, Ripa d'Arno, Pisa.

Zeno, Ancona, Embrun). At Verona cathedral and elsewhere there is an exterior tribune above the porch.

Finally we may mention the atrium, a survival from the ancient basilicas, e.g. Sant Ambrogio, Milan and San Stefano, Bologna.

Towers

These are generally lofty and square, unlighted at the base, with small windows in the upper stages, and slender columns as mullions. Sometimes central, they are more usually western or set laterally to the beginning of the choir. Some are detached. In Rome and its neighbourhood many are of brick and lighted from the second stage upwards. Such massive towers as that of Aosta cathedral are rare; generally they are slender and light, and often lend a distinctive charm to the Italian landscape. They are built in the same style right down to the fifteenth century, with Lombard bands framing the openings, e.g. San Giovanni, Bellaggio; Gemonio near Varese, and in numberless other places. A few are battlemented.

Lombard ornament betrays a poverty of invention. Besides the Lombard bands that are found everywhere, various tooth and lozenge moldings are used (Santa Fosca, Torcello), and occasionally concave discs of terracotta are inserted with a decorative effect in the walls.

Other Italian Buildings

Though North Italy has left its mark upon a great deal of Italian building, there are certain groups or families of churches that have developed independently and in a different direction.

With such monuments as the churches of Ravenna still standing, it was inevitable that the architecture of Byzantium should leave its impress upon the buildings of those parts. Along the whole of the Adriatic coasts it has set its mark upon those churches that are mainly constructed of brick. They have a style that is instantly recognizable; the east end of Murano, for example, with its line of niches at the base and the two lines of arcading above with the double row of saw-tooth molding, is a typical example, and one that, in its general lines, we can see repeated as far afield as La Roccellata in the Ionian islands.

St. Mark's at Venice, finished in the twelfth century, is another typical Byzantine building, modelled on the Holy Apostles at Constantinople, with its series of domes as vaults. The Marches of Ancona have a whole group of churches showing the same influence, e.g. Le Moje near Jesi, Santa Maria at Portonovo, Sasso Ferrato, and finally San Vittore at Chiusi, the last named an almost square church of three bays, with three apses at the east end, and two more north and south of the second bay. The central part is covered by a dome on four piers, the rest of the church having groined vaults.

Apulia shows another group of churches. San Sabino at Canosa has the crossing, the transept arms and the two bays of the nave vaulted with domes, a similar method being used also at Santa Maria at Trani and Molfetta cathedral, the largest and finest church of this type. In this district the aisles have tunnel or half-tunnel vaults. At Molfetta the domes on squinches and pendentives are constructed with drums.

Some of the churches of South Italy are very

imposing. Their plan is of the basilican type with, often, Lombard influence (Bari); they are well built of carefully dressed stone. The west front, occasionally with three doors, is severe, though in some cases (Ruvo and Bitonto cathedrals) the doorways are richly decorated in the Lombard style, with lions supporting the columns and griffins surmounting them. French monastic influence is observable in many places, e.g. Santo Cacare at Palermo, which has a thoroughly French doorway.

These southern churches have lofty east ends, unadorned by wall galleries, but relieved by the columned windows, the central one being flanked by sculptured animals in high relief (Trani).

The towers are square, and similar, as a rule, to those of the north, both in position and decoration. At Amalfi the topmost stage is circular, adorned with intersecting arcading, as at Gaeta, with four round turrets at its base.

The decoration shows a peculiar mixture of Lombardic and Arabic motives, e.g. the apse of Santo Spirito at Palermo, with tooth molding surrounding the windows and intersecting arcading of round-headed arches, a design also common in North France, Normandy and England. But here, as also at Cafalu and Amalfi, these arcadings are so arranged and intermingled as to produce an effect strongly reminiscent of Arabic ornament and fenestration.

Catalonia[1]

Characteristics

Lombard plan, nave and aisles each with its apse;

[1] Examples: Ripoll, Sta Maria (Bohi), Sant Vicens (Estamaria), Sant Climent (Tahull), Organya, Sant Christ (Palera), St. Martin (le Canigou), Marceval (Pyr.-Or.).

choir with niches; vaults common at a very early date, tunnel, groined; dome over the crossing; aisle vaults abutting the high vaults; piers of Provençal type; often no tympanum; towers and ornament Lombardic; abacus instead of capital.

The most remarkable feature in Catalan building, where North Italian influence is strong, is the very early adoption of the vault. Some naves were vaulted as early as the tenth century, owing, undoubtedly, to contact with the Arab and Mozarabic builders of Spain.

Yet the earliest Romanesque churches of Catalonia had timber roofs. They are of the North Italian and South-East French types that need not be described again. The influence of Lombardy continued into the twelfth century, as is proved by the contract (1175) for the completion of Urgel, but from then onwards Languedoc began to make a continually greater impression upon Catalan architecture.

But the chief interest of the Catalan churches lies in their very early use of vaulting. Santa Maria at Amer had a vaulted nave in 949, Sta Cecilia at Montserrat in 957. These earliest vaults were plain tunnel vaults spanning narrow naves, but transverse arches soon appear, at Sant Pedro, Casseres, Cohaner, etc.; and such a great church as Ripoll was vaulted by 1025. In France, on the other hand, apart from St. Martin-du-Canigou, vaulted in 1005, there is no evidence of vaults being constructed so early; it is quite probable that those at Elne and Arles-sur-Tech are later than 1100 and the first consecration of these churches.

Another early feature of Catalan building is the

dome over the crossing. In aisleless churches, e.g. St. Daniel at Gerona, and Sant Pans at Corbera, it is carried on squinches, as early as 1020, but in aisled churches it is supported by massive piers, e.g. Sant Vicens, Cardona; Sant Llorens del Munt (Plate x, fig. 3).

In the twelfth century, with the growth of French influence, Catalan architecture begins to show a mixture of the characters of the schools of Poitou and Provence. With no change of plan, which continues to be basilican, the nave vault is usually a round or pointed tunnel (without clerestory), abutted by the aisle vaults, either tunnel or half-tunnel. The piers recall those of Provence.

The Benedictine plan was introduced by the Cluniac monks in the twelfth century (Tarragona and Lerida), while Gothic vaulting came with the Cistercians. It is not until the twelfth century that we find fine sculptured west fronts such as that of Ripoll. Here on either side of the door are horizontal bands of sculpture, reminiscent of Catalan miniatures; the influence of Lombardy shows itself in the two lions facing one another at the foot of the door. The summit of the front is horizontal, a feature found elsewhere. Other façades worthy of mention are those of Besalu, Santiago de Carriou and Moarbes.

The towers (Plate VI, fig. 5) are generally square, of the Lombard type, e.g. Evill-la-Vall, each of the five stages of which is pierced with twin windows with a dividing column, and framed in rows of Lombard bands. The fine battlemented towers of Elne, St. Michel-de-Cusca (P.-O.) and Ripoll, windowless in the lower stages, have two ranks of twin windows in each of the upper.

The style of decoration is the same as in Lom-

bardy: Lombard bands, lozenge molding (Corneilla-de-Conflent, Urgel, Tahull, etc.), concave inset discs and rosettes, polychrome tiles (apse of Santa Maria, Tahull), trapezoidal abacus instead of the capital (St. Martin-du-Canigou). St. Andre-de-Sorède and St. Genis-des-Fontaines (P.-O.) have rare examples of eleventh century carved lintels.

As vaulting was employed at such an early date in Catalonia, it is possible that it may have passed from there into France. It does not, however, seem that Catalan influence was as great as some have thought, for as M. Deshoulières has pointed out, the characteristic elements of Catalan architecture, Lombard bands and the horseshoe arch, are by no means common. The latter, in fact, is quite exceptional, and the former may just as well have been introduced from the East as from the South.

Rhenish School[1]

Characteristics

Survival of the Carolingian type of plan; basilican plan with sometimes two apses and transepts and trefoiled choir; circular plan; massive and slender supports in alternation; nave arcade with round-headed arches with unmolded edges; some tribunes;

[1] Examples: *Germany*: The Holy Apostles, Sta Maria im Capitol, and Gross S. Martin at Cologne, cathedrals of Speyer, Trier, Mainz, Worms and Bonn, Maria Laach, St. Castor (Coblenz). *Belgium*: Hastières, Tournai cathedral and St. Quentin, Lobbes, Ste. Gertrude (Nivelles). *Holland*: Maastricht, Ruremonde. *Sweden*: Upsala, Lund. *Denmark*: Ribe, Viborg. *Switzerland*: Schaffhausen, Schönenworth. *France, Haut-Rhin*: Murbach. *Bas-Rhin*: Marmoutier, St. Jean-des-Choux, Rosheim, Ste. Foy (Selestadt), St. Thomas (Strasbourg). *Vosges*: Etival, St. Dié cathedral and Notre-Dame.

nave originally timbered, afterwards with groined vaults; lantern over crossing; apse semi-circular, sometimes with a row of niches; exterior: walls bare or decorated with Lombard bands; little sculpture; galleries around the apse; several towers at east or west end, rhomboidal spires; churches often of great size.

This school took shape in the Rhineland, a district where the old civilizations of Roman and Carolingian times had flourished, and the highway from Italy and the South to Northern Europe. It spread to the confines of Burgundy, to Paris and Northern France (Morienval, St. Germain-des-Prés), to the Netherlands, Scandinavia, and the whole of Germany, and was not without its influence in Austria and Switzerland. Its centre was Cologne and its Carolingian cathedral. Its monumental edifices, though imposing by their great size, are inclined to be heavy. It distinguished itself by its conservatism, remaining vigorous well into the thirteenth century.

Covering so vast a territory, this school naturally had all possible kinds of building materials at its disposal, but mention may be made of the grey, blue and rose-coloured sandstones that give a special character to so many churches in the Rhineland and the Vosges. At Maria-Laach, for example, they harmonize most happily with white and yellow limestone and with the blue basalt of some of the columns. We may also note the tufa and trachyte used at St. George (Cologne), the granite and brick common in the buildings of North Germany. Often the blocks are finely dressed and of large size, giving an impression of great solidity, as in the façade of Marmoutier and the east end of Murbach.

Plans

Some of the Rhenish churches are built on the plans of the great churches of Carolingian times, as for example the cathedrals of Trier, Mainz and Bonn and the abbey of Maria-Laach, with an apse at each end of the nave. This arrangement is found at Clermont in the fifth century, and was, somewhat later, adopted at St. Servan and Canterbury; the ninth century plan of St. Gall also shows it, but in the Romanesque period it was exceptional.

The basilican plan is found at St. Jean-des-Choux and Reichenau; the nave is broad, almost double the width of the aisles, and there are three apses. Minor apses open from the arms of the transept.

Trier has no transept; Worms (Plate x, fig. 2) has one, while at Maria-Laach and Mainz there are two, as was the case at Verdun according to the still existing plan of the Romanesque cathedral.

The single transept at Speyer is of exceptional size. In some places, e.g. Bamberg, the single transept is situated at the west end, and the west crossing, or west apse, where it existed, was used to enshrine and expose the relics of a saint, as at Fulda, where the body of St. Boniface was enshrined in this position in the ninth century.

The trefoiled plan, of which we have seen a few examples elsewhere, was specially developed in the Rhineland. It is formed by the choir and the transept arms built as three half-circles. St. Maria im Capitol (Cologne) is a noteworthy example, with the aisles continued round the three half-circles. The church of the Holy Apostles in the same city combines the trefoiled plan with two apses and transepts, the west transept having square-ended arms (Plate iv, fig. 6).

Romanesque copies of the round Carolingian church of Aix are found at Mettlach Ottmarsheim, Wisby (Gottland) and Nymagen (Holland).

Other plans also, used everywhere, are employed; the Benedictine plan at Königslütter, Ellwangen and St. George (Cologne); the square end at Murbach and Paderborn; the choir with ambulatory (less common) at St. Maria im Capitol, Limbourg on the Lahn (without radiating chapels), St. Gotthard at Hildesheim (with three chapels) and Maastricht.

In North Germany and Sweden are a number of small unvaulted brick churches with a square choir loftier than the nave, and a central tower between, e.g. Upsala and Valfrouberga.

Interior

Columns and piers are used as supports, often in alternation, the piers square or cruciform on plan (often with an attached half-column or pilaster), or sometimes a quatrefoil composed of four columns, e.g. Notre-Dame at St. Dié (Vosges).

The nave arcades have round-headed arches, usually of one order only and with unmolded edges. The pointed arch is rare and late.

Tribunes are not common (Andernach, Bacharach, St. Ursula [Cologne]) except in the round churches (Ottmarsheim).

Nave vaults did not become common until a somewhat late date; when introduced they were generally groined (Speyer, Worms), as this was the system already used for the aisles, but it was ill adapted for naves of such great width, lacking stability. When the original timber roofs of transept arms and crossing were replaced by groined vaults, a dome, often octagonal, resting on squinches, was frequently

built over the crossing (Worms). Occasionally it rises above a lantern, as at Maria-Laach (square) and St. Michael's, Hildesheim (octagonal).

In some churches, e.g. Speyer, Andernach, St. Martin (Cologne) and elsewhere, a number of large niches are constructed in the apse wall, a feature reminiscent of Roman building and borrowed from North Italy. The apse is semi-domed and the first bay has a tunnel vault.

Exterior

The west front is usually very severe, with often nothing but Lombard bands to relieve its plainness. Where the doorway is sculptured, which is but seldom, the work is often coarse (Andernach). Alsace, however, can show some of a more ornate character (Andlau), with sculptured lintel, tympanum and jambs. The sculptured foliage, with figures of animals and human beings set amidst the leafage, recalls that of Lombardy, but more usually the motives are purely conventional (lions and foliage at Murbach), and the farther east we go the coarser becomes the execution.

In a few cases the whole west front is covered with arcading, as at Andernach, which, with its two square west towers, has an imposing appearance. The same is true of St. Castor (Coblenz), and particularly of Marmoutier, which has, in addition, a third square west tower rising above a large porch and narthex.

Towers

Many churches have two west towers flanking the porch, but a special feature of the Rhenish school is the number of towers situated at or near the east

end of the church. Very often, as at Maria-Laach, Mainz, Speyer, Worms (Plate x, fig. 2), and Bonn, we find a central tower rising from the crossing, and two east towers flanking the apse. They may be square, round or eight-sided, and are often crowned with rhomboidal spires (Plate vi, fig. 6). The upper stages are pierced with windows and often adorned with arcading. Frequently, too, they are lightened with graceful wall galleries, similar to those of Lombardy, which also decorate the apse and side walls of the church, e.g. Trier, Andernach, Speyer, Mainz, Worms and Cologne (Holy Apostles).

The decoration used in this school calls for no special remark, being, as a rule, rudimentary and monotonous. Maria-Laach and Andernach have some trefoiled arcading of a particular character, and the north gable of the west transept of Mainz some windows worthy of mention. It would seem that the art of painting was more honoured than sculpture.

APPENDIX

MONASTIC ARCHITECTURE

We cannot altogether omit mention of the monastic buildings, though our treatment of them must be very brief. In the first place it was the monks who had perhaps the greater part in the development of Romanesque architecture, and secondly, a large number of our churches were originally monastic buildings which have been preserved while the monasteries themselves have disappeared.

The monastic remains discovered and studied by Voguë in Central Syria, such as those of Chaqqa and St. Simeon the Stylite, show that the general arrangement of monastic buildings underwent but little change from those early days until the Romanesque period. Exceptions must, of course, be made in those cases where some special purpose of the community necessitated a change in the nature and arrangement of the buildings. So, for example, the Templars at Krak occupied a fortified castle, and the Hospitallers had to arrange their buildings with an eye to the best interests of their particular work.

As a rule an isolated spot was chosen as the site of a monastery, care being taken that there was an abundance of wood and water. While the Cluniacs preferred the hills, the Cistercians generally built in a valley.

The buildings were enclosed within a fence or wall, which was sometimes fortified both as a precaution against possible attack and for the safeguard of the right of sanctuary, e.g., St. Honorat at Lerins (A.-M.) which had a tower of defence in the eleventh century, St. Florent-le-Vieil (M.-et-L.), and St. Germain-des-Prés which was surrounded by walls and moat in the twelfth century. Often, however, the enclosure was bounded by a simple wooden

fence and the monastic buildings were constructed at first of the same materials, e.g., Molesmes (Yonne) in 1075, and Citeaux (Côte-d'Or) in 1098.

Good twelfth century examples of the gatehouse giving entry to the enclosure are to be seen at Cluny and Le Wast (Pas de Calais). The porter generally had a dwelling in the upper storey of the gatehouse, whence he could take stock of all arrivals. Almost immediately within stood the guest house or houses, the sexes being separated, containing a kitchen and sometimes a chapel, e.g., Poblet (Spain). The servants' quarters and stables were close at hand (Cluny, eleventh century), and the almonry, likewise, was near the gate. The infirmary, a separate building, with its own chapel and an adjacent pharmacy, was built, if possible, close to a stream running through the enclosure, and this was also used for flushing the latrines. The most retired corner of the outer enclosure was occupied by the novitiate, comprising refectory, dormitory and a room for work or reading and meditation (Cluny). Finally there were the buildings used for farm and domestic purposes, stables, workshops, such as the smithy at Fontenay, mills, bake-houses, barns and store-houses, as well as fish-ponds and schools, the whole forming a veritable village.

The monastery proper formed a second, inner, enclosure. The middle is occupied by the cloister, a covered walk or gallery, enclosing a garden or a courtyard, the cloister-garth. The cloister corresponds to the atrium of the old basilicas, for reasons of convenience now placed by the side of the church. Some were constructed wholly of wood, some had a wooden roof with an open arcade of stone looking on the garth, while a certain number had vaulted roofs, e.g., Silvacane (B.-du-R.) with a tunnel vault, Gerona (half-tunnel) and Nieuil-sur-l'Autize (Vendée) with groined vaults. The arcade supports may be single columns, piers or grouped columns; good examples of the various types may be seen at St. Bertrand de Comminges, St. Trophime (Arles), Thoronet (Var) and Nieuil-sur-l'Autize. At Montmajour and Fontenay a wide segmental discharging arch, with, at Fontenay, an oculus beneath it, contains two or three of the arcade arches.

The plan of the church conforms to that usual in the

locality or to that preferred by the particular order, Cluniacs, Cistercians, Templars or others. The monks' choir is long, the nave alone being open to the public. As there was generally a large number of priests in an abbey the church had to contain several altars, but in a convent church there might be only one or two, according to the number of chaplains.

As a general rule the church ran parallel with the northern side of the cloister; on the east side was the sacristy, generally communicating with the transept, and also, as a rule, the muniment room and treasury. Close by was the chapter-house, usually the finest piece of architectural work in the whole monastery, and often divided into two or three naves and several bays by rows of columns or piers. Above this and the adjacent buildings was the dormitory, a large hall generally roofed with timber, with, in many cases, the lavatories close at hand. At Fontenay a small room, or parlour, and then a large room, the calefactory, which was used also as the scriptorium or as a workroom in bad weather, opened out of the same side of the cloister. On the south side of the cloister was the refectory, in one wall of which was usually built the reader's pulpit with a small stairway giving access to it. The kitchens, built of stone as a precaution against fire, flanked the refectory, while on the other side of the latter and opening into the cloister garth was often a small building used for ablutions. Finally, on the west side of the cloister, and communicating with the kitchens, were the cellars, buttery and so forth, generally vaulted for the better preservation of wine, etc. The abbot's apartments stood apart from the rest of the monastic buildings.

DEPENDENCIES OF THE CHURCH

The burial ground was situated alongside the church, in front of the door, or by the apse. In Romanesque times it was sometimes enclosed by a simple wall, but in other cases surrounded by a cloister, as is shown by the statutes of Peter the Venerable. In 1180 at the priory of Madiran (Hautes-Pyr.) the cemetery cloister having been destroyed, the people helped to build another in which they could store their provisions. We have evidence, too, that dwelling places were sometimes contrived either in the cloister

itself or in the space enclosed by it. It was even fortified [St. Florent, Saumur (M.-et-L.) in the eleventh century]; this, however, was contrary to conciliar decrees.

It is clear that the people of those days looked at God's acre with very different eyes from ours. At the same time they wished to be buried as near as possible to the church. A certain number could be buried within the building itself, but this, naturally, was the privilege of only a few. The most desirable burial places were near the sanctuary, the tabernacle, or the shrines of the Saints, our intercessors before the supreme Judge. In order, therefore, to accommodate those for whom there was no room in these most privileged positions, other chapels were built; there were, for example, three in the cemetery of Mende cathedral. These mortuary chapels were often round, e.g. Chambon (P. de D.), or octagonal, e.g. Montmorillon (Vienne), where the lower storey serves as an ossuary. Sometimes a lantern was installed at the summit. Elsewhere, instead of the mortuary chapel, we find the curious erection known as the " lantern of the dead," a lofty hollow pillar with an altar at its base, and at its top a lantern chamber to which a lighted lantern was hoisted every night. In Romanesque times the lantern of the dead was seldom found outside that part of west France bounded by the Loire and the Dordogne, and from the beginning of the thirteenth century it was but very rarely constructed [St. Pierre d'Oléron (Ch.-Inf.)]. It varies in form, that at Journet (Vienne) is a simple circular column, at Oradour-St.-Genest (Haute-Vienne) it is octagonal, at Oradour-sur-Glane (Haute-Vienne) and Antigny (Vienne, thirteenth century) it is square with molded angles, while the one at Fénioux (Ch.-Inf.) is composed of a group of columns. The opening through which the lantern was introduced was closed by a metal grille or small door, which never opened on to the side against which the altar stood, but at right angles to it, or else with a slight inclination towards its corner. The summit or lantern chamber was pierced on each of the four sides, and was generally surmounted by a small spire carrying a cross.

The altar, where it still exists, is a stone slab supported by a solid mass of masonry (Antigny), or a column (Journet) or by simple corbel-brackets (Moussac). In the

last named case, the column, of late construction, is solid, nor is there any trace of any metal frame of any sort on which a lantern could have rested; so also at Pamplie (Deux-Sèvres) where the column becomes thinner towards the top and carries a small cross. These solid columns may be what are called sometimes "*Montjoies,*" a kind of altar, or simply memorial columns, or finally merely boundary marks. Simple crosses were often set up to delimit an abbey's domains, and some of them were provided with an altar or at least a lectern for the book of the gospels; Fontevrault has an example dating from 1119.

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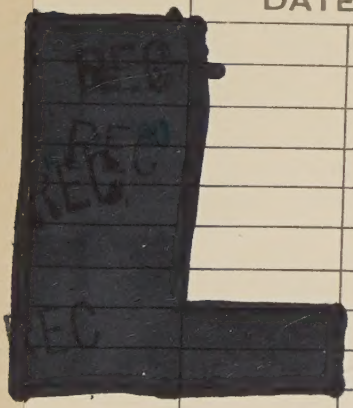

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